OPTICAL SIGNATURES OF THE NEAR-SHORE WATERS OF SOUTHERN MONTEREY BAY

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THESIS

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ABSTRACT

A study was made to relate certain optical properties with other observed properties of water sampled in southern Monterey Bay, California. Dominant wavelength, percent purity, and visual efficiency were determined for 65 near-shore water samples using a one-meter sample cell in a modified Beckman DU-2 spectrophotometer. Measurements made at the sample locations included salinity, surface temperature, phosphate, coliform count, oxygen, and particle size distribution, in the 1.04μ to 27.6μ diameter range. Most of the sampling was done at or near the Monterey sewage outfall. Dominate wavelengths were found to vary between 520 nm and 585 nm. Percent purity was found to fluctuate between 2 and 40 percent. Neither variable seems to be strongly sensitive to variation in treated sewage concentration for the Monterey outfall. The maximum transmission was linearly fitted to the logarithm of the projected particle area, A, by the equation: $\log_{10}(A/10^6) = .544 - .634$ (max T), where A is in μ^2, and transmission is per meter. Dominant wavelength for each of the 21 Forel-Ule scale colors was measured spectrophotometrically and compared with the dominant wavelengths of the samples.

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I. INTRODUCTION

A. BACKGROUND

The effect of pollution on coastal waters is being increasingly studied. Of special interest are the dilution, the distribution, and the biological effects of effluents from sewage outfalls. Indications of sewage effluent distribution and concentration are helpful in investigating the effect an outfall has on the marine ecology or the suitability for human recreational use of an area. Such studies require that quantitative measurements be made of the near-shore water.

For many years scientists have observed the "color" and the "transparency" of the world's oceans and lakes.* These apparent properties vary with the different observers and conditions of observation [1]. Observations normally have not been made close to shore. Near-shore water is often in certain respects obviously different from other water in that its color tends to be "browner" and it contains more particulate matter. This is especially true in regions where effluents are being added from the shore.

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*"Color" or Forel-Ule color is obtained by comparing a series of numbered vials of colored solutions with water provided with a background (usually a Secchi disk lowered to a depth of one meter). "Transparency" or Secchi depth is the depth (in meters) at which a Secchi disk (usually 30 cm in diameter) disappears from view when lowered into the water.

Jerlov [2, pp. 145-150] has reported oceanic color on a more quantitative basis by using values calculated from spectral irradiance and radiance data. The emphasis, though, was on optically characterizing world oceanic waters.

This study was pursued in an effort to obtain quantitative relationships between color signatures obtained from spectral transmittance (an inherent property) and other observed sea water properties. It was further hoped to check the practicality of determining effluent distributions from sewage outfalls by in situ (as opposed to remote) optical and electronic particle counting methods.

B. NATURE OF THE PROBLEM

1. Optical Properties of Water

In the study of the oceans one property of the water which has often been measured is its "color." The word "color" is an elusive term, since it depends upon the visual acuity of the observer and many other factors, such as sky-lighting, sea state, direction of observation, height of observer above the sea, and the nature of the reflecting background lowered into the water. In 1895 F.A. Forel put water color on a semi-quantitative basis with the introduction of his color scale [3]. Most of his measurements were made in Swiss lakes where the water was quite blue. The scale was extended by Ule, among others, to make possible the characterization of the more brownish waters found in

near-shore regions. A standard Forel-Ule scale is presently used for ocean water color determination [4, pp. 13-15].

A white surface (usually a Secchi disk) of 30-cm diameter is lowered into the ocean to a depth of one meter. This furnishes a reflecting background for the water, the color of which is matched with that of one of a series of vials containing colored solutions. The closest matching color yields the Forel-Ule number of the water. Additionally, the "transparency" of the water may be obtained. A Secchi disk is lowered in the water until it disappears and is raised until it is again sighted. The average of these two depths in meters is known as the "Secchi depth" or "transparency" [4, pp. 13-14].

The difficulty with both the Secchi depth and the Forel-Ule scale value is that they are at best semi-quantitative and depend rather strongly upon the visual acuity of the observer plus many other uncontrolled factors such as those suggested above.

The measurement of inherent optical properties of sea water should allow samples from different depths and locations to be more readily compared. One such property is that of <u>beam transmittance</u>, T, defined as the ratio of the intensity, I, of a beam of light of a particular wavelength having traveled a distance, d, in a water sample, to the intensity, I_o, of the light entering the sample. Beam

transmittance is related to the total beam attenuation coefficient, c, in the following way:

$$T = I/I_o = e^{-cd}.$$

Beam transmittance in water is highly dependent upon the wavelength of the incident energy. For pure water the maximum transmittance in the visible region occurs at about 462 nm. As the water purity decreases, i.e. as the number of particles and energy absorbing impurities increase, the beam transmittance decreases and the point of maximum transmittance may shift. Dominant wavelength (color) and percent purity (purity of that color) of transmission for a given water sample can be assigned to that sample if the transmittance is known as a function of wavelength.

The theory for the assignment of dominant wavelength (color) to samples is based upon the theory of trichromaticity, the mechanism by which the human eye determines color. When the eye observes an image, the color is determined by the mind's mixing of three independent colors, such as brown, orange, purple, etc. Thus, the mind has expressed a color or dominant wavelength which has three components: red, green and blue [2, pp. 140-142].

This theory can be put on a more quantitative basis by physically measuring the amounts of red, green,,and blue in an object or sample. The amount of energy in each of these three components is referred to as X, Y, and Z, respectively, the tristimulus values. Chromaticity coordinates

(trichromatic coefficients) x, y, and z, are simply the normalized tristimulus values. The energy required for each tristimulus value in order to produce a certain color has been calculated for various energy sources, such as sunlight (Source C) or a gas-filled tungsten lamp of color temperature 2,850°K (Source A) [5, pp. 254-316]. From the tristimulus values, chromaticity coordinates have been calculated. Figure 1 shows such a plot of chromaticity coordinates and the wavelength (color) each represents for Source A. The color-mixture envelope is shown as the outermost envelope on the graph [5, p. 293]. For Source A (A, Fig. 1*) the chromaticity diagram has the distribution shown. If a different source were used, the source point on the graph would shift, and all lines of dominant wavelength would originate at the new "center" and extend to the color envelope.

From measurments of the transmittance of light at various wavelengths in the visible region, the chromaticity coordinates, x and y, for transmission may be calculated for a sample. Once the coordinates are plotted on a chromaticity diagram, a line is drawn from the coordinates of the light source, A, through the sample point. The intersection of the color-mixture envelope and this line, W, marks the <u>dominant wavelength</u> of the sample. For point P in Figure 1, this is the point W. At point W on the color-mixture line the value of the wavelength is 595 nm. For point P the

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*All figures are given in numerical order beginning on page 35 below.

dominant wavelength is thus 595 nm. The percent purity of point P is defined as the ratio of the length of line segment CP to that of segment CW, multiplied by 100. The value of the tristimulus value, Y, when multiplied by 100, is called the percent visual efficiency, a measure of the brightness or intensity of the energy passing through the sample.

Once defined, dominant wavelength, percent purity, and visual efficiency of transmission are inherent properties of water; they completely express the color, purity of that color, and intensity of light transmission in the water. Additionally, this calculation reduces the values of transmittances observed throughout the visible spectrum to three numbers.

2. Near-shore Effluent Distributions

For many years a standard measure of the effect of sewage outfall has been the coliform level. Coliform bacteria are present in the digestive tracts of warm-blooded animals. By mapping the relative bacterial density, a kind of measure of the limits of a sewage distribution in the ocean may be obtained [6].

This indicator has become less reliable since many sewage treatment facilities now chlorinate their treated sewage effluent. The chlorine destroys most bacteria, including coliform, and makes the latter unreliable as an indicator of the distribution and dilution of sewage effluents.

The development of new and more accurate indicators, or signatures, would aid greatly in marine ecological investigations, outfall design and location, and in the determination of the suitability of coastal water for water-contact recreational use.

C. METHOD OF INVESTIGATION

A better indication of the distribution of sewage in the ocean may be obtained from the level of a particular nutrient, since even treated sewage is nutrient rich.

An obvious difference between "normal" near-shore water and that near a sewage outfall may be its apparent or inherent color and the fact that there is often much additional particulate matter present. On a quantitative basis these two parameters can provide indications of effluent distribution.

The water of southern Monterey Bay provides a suitable region for the study of sewage effluent distributions. The bay is relatively sheltered and a number of outfalls extend from shore. Due to its accessibility, the Monterey sewage outfall has been the source of numerous studies both at the Naval Postgraduate School and at Hopkins Marine Station.

The Monterey outfall extends 260 m into the bay. At its mouth the water depth is approximately 6 meters. The average flow rate from the outfall is 2.8 mgd of secondarily treated sewage effluent.

To obtain an idea as to the measurable quantities which might be good effluent indicators, four stations were

selected around the Monterey sewage outfall for sampling. Each station was sampled at the surface and one meter from the bottom. Surface samples were also collected on one occasion near the Pacific Grove and Seaside sewage outfalls.

To put optical data on a quantitative basis, dominant wavelength, percent purity, and visual efficiency were determined for each water sample. The data to compute these values were measured with a modified Beckman DU-2 spectrophotometer. Most laboratory spectrophotometers are equipped to handle cells from 1 to 10 cm in length. For such cells, measured transmittances for water are very nearly unity. Work with natural water requires the modification of such laboratory instruments to allow the light beam to pass through a relatively long sample.

Particle distributions (size and number) were determined with an electronic particle counter.* In addition, water temperature and samples for phosphate, salinity, oxygen, and coliform determination were taken.

The data were then examined both graphically and statistically to determine the relationships, if any, between observables. The dominant wavelength of each of the 21 standard Forel-Ule scale colors was also measured, as that information was not available. Such determinations make it possible to assign quantitative wavelength values to each of the solutions of the Forel-Ule scale. The dominant

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*Model T Coulter counter having 15 channels.

wavelength of the samples can then be related (indirectly) to a Forel-Ule color value.

II. OBSERVATIONAL PROGRAM

A. SAMPLING LOCATIONS

1. Station Locations

Samples were collected on six different days: September 16, 1971; September 28, 1971; October 5, 1971; October 12, 1971; October 18, 1971; and November 16, 1971. On October 18 stations __-2 and __-3 were sampled at the surface 350 m from their respective outfall. For detailed station locations see Figures 2 and 3 and Table I.

a. Station M-1

A surface sample was collected at the "boil" (i.e. at the surface, directly above the sewage outfall). All other stations were located relative to this station.

b. Station M-2

Station M-2 was located on a line parallel to the shore through the boil and "north" along the coast 100 to 125 meters. Both surface and bottom samples were taken.

c. Station M-3

Station M-3 was located on a line parallel to the shore through the boil and "south" along the coast 100 to 125 meters. Both surface and bottom samples were obtained.

d. Station M-4

This station was located midway between the shore and the boil. Both surface and bottom samples were taken here.

e. Station M-5

This station was located on a line perpendicular to the shore and passing through the boil, 100 to 125 m seaward from the boil. Both surface and bottom samples were taken here.

f. Station M-6

This station was located on the same line as Station M-5, but 300 m seaward from the boil. A surface sample only was taken here.

g. Station M-7

A surface sample was taken near "B" buoy (36-39.2' N x 121.52.9' W) (see Fig. 2) on October 12.

h. Stations S-__ and PG-__

S-__ stations were taken at the Seaside sewage outfall at the surface only. PG-__ stations were taken at the Pacific Grove sewage outfall - again only at the surface.

i. Stations 500S to 500N

These stations were sampled near the Monterey outfall in conjunction with Hopkins Marine Station. They lie along a line of 260.5° (true). The numbers indicate the number of meters the station is located either north or south from the boil.

2. On Station Procedure

Three different vessels were utilized for sampling. On September 16th, October 5th, and October 12th, the NPS 40-foot open motor launch was used. On September 28th, the NPS 63-foot research boat (a converted air-sea rescue vessel) was employed. The final samples were obtained in conjunction with Hopkins Marine Station aboard their research boat TAGE.

The surface water samples for analysis were obtained by dipping a polyethylene bucket over the side of the vessel. For ease of sample withdrawal, a valve was fitted near the bucket's bottom.

Sub-surface samples were taken with a portable winch and a messenger-tripped Van Dorn-type sampling bottle which held enough water for all sample analyses. The sub-surface samples were collected approximately one meter from the bottom. On November 16th, sub-surface samples were collected by divers from Hopkins Marine Station by manually tripping and returning the sampling bottle to the surface at each station.

3. Station Navigation

On September 16th, stations were visually located in relation to the Monterey outfall boil. On September 28th, fixes were obtained by taking the bearings of known land marks. Fixes by this method have an error radius of 15 m. Beginning on October 5th, station locations were obtained by horizontal sextant angles (the horizontal angles between

three known land marks). This method of navigation yields a radius of error of 7 m.

B. SAMPLE ANALYSIS

Sample analyses were carried out immediately following the collection of the samples, with the exception of the salinity samples which may be stored for several weeks without deterioration.

1. Transmittance

a. Equipment

The samples for this analysis were collected in 22-liter polyethylene bottles, approximately one-third filled. Analysis was performed with a modified Beckman DU-2 spectrophotometer (Figs. 4 and 5). The instrument was mounted on a 305 cm x 20.8 cm aluminum channel. The original cell compartment was replaced by a light-tight box, 110 cm x 30.5 cm x 21.6 cm. Cables connecting the detector (D, Fig. 5) and the instrument proper (M, Fig. 5) were extended so that the detector could be mounted on the end of the light-tight box. The inside of the box was painted flat black and had supports to hold a glass cell, approximately one meter in length and an inside diameter of 6.8 cm (C, Fig. 5). The end plates of the cell were constructed of plate glass and held in place by a rubber O-ring and flange assembly. The total cell length from the inside of one cell end-plate to the other was 1.016 m.

The cell was filled and emptied through inlet and outlet fittings in the cell wall. From these fittings

rubber hoses ran out of the light tight box to the water sample and vacuum aspirator.

To reduce the effects of reflection inside the cell, a series of seven equally spaced baffles, having one-inch diameter, circular, black aperatures, was installed (B, Fig. 5). Control of beam divergence was accomplished by placing a 25-cm focal length lens in the light path within the instrument mounting block (L, Fig. 5). By decreasing the slit-width and adjusting the lens, the beam was kept within the horizontal limits of the photomultiplier tube used as a detector. The vertical beam limits were constrained by the cell baffle apertures and the entrance to the detector. This allowed variation of reflections in the vertical plane. When the cell was filled with water, the light was scattered and reflected off of the cell wall. With a water sample, the beam was more diffuse and covered a larger portion of the detector than a beam passing through air. Consequently, when the cell was filled with water, observed transmittances were relatively higher than in air. Absolute values were as much as 10 percent too high. In some cases, distilled water had transmittances of 1.10. Some calculations for dominant wavelength and percent purity were performed with "estimated correct values." When compared with calculations made with observed values, the dominant wavelengths and percent purities were in all cases found to agree within 5 percent. In most, the agreement of dominant wavelength is ±2 nm and percent purity is ±5 percent.

For the reference light source, an optical light-pipe (P, Fig. 5) was inserted into the lamp housing and aimed at the tungsten filament of the lamp (T, Fig. 5). The other end was inserted in the side of the detector housing (D, Fig. 5). This end of the light-pipe was provided with a shutter to cut off the light and a filter to reduce the intensity of the reference light to within the limits of the photomultiplier tube. A Kodak Wratten neutral density filter having a density of 3.0 was used in all analyses except those from November 16th, when one was used having a density of 3.5.

b. Transmittance Calculation

The transmittance in air was assumed to be 1.0. To determine the transmittance of water at a particular wavelength, the ratio of the transmittance of water to air was taken.

A major correction was applied to account for differences in reflectivity between glass-air and glass-water surfaces at the cell ends. The calculation was based upon the Fresnel reflection formula for light at normal incidence to a surface separating two media having indices of refraction n_1 and n_2 [5, p. 179].

$$r = \frac{(n_1 - n_2)^2}{(n_1 + n_2)^2}$$

For this case the light passed through both cell ends so the correction had to be applied at both ends.

$$T_{wr} = \frac{T_{wo}}{T_{ao}} K$$

where:

T_{wr} = actual transmittance of water,

T_{wo} = observed transmittance of water,

T_{ao} = observed transmittance of air, and

K = 0.92 ± 0.01 = a constant to account for the difference in indices of refraction.

K is computed in the following manner:

$$K = \frac{1 - 2(r_{ga})}{1 - 2(r_{gw})}$$

where:

$$r_{gw} = \left(\frac{n_g - n_w}{n_g + n_w}\right)^2$$

and

$$r_{ga} = \left(\frac{n_g - n_a}{n_g + n_a}\right)^2$$

n_g = 1.51 = index of refraction of plate glass,

n_w = 1.33 = index of refraction of water, and

n_a = 1.00 = index of refraction of air.

Reflection on the outside of the glass at both ends of the cell was not considered as it is the same whether air or water is in the cell.

To avoid having to set the slit-width of the instrument such that air had a transmittance of 1.00, the transmittance of a water sample was obtained by taking the ratio of the

observed transmittance of water and observed transmittance of air at the same slit-width and multiplying by the K-factor. In this manner a "blank" of air was run for each day's analysis to provide reference transmittances in air for calculation. Transmittances for the water sample were observed at the same slit-widths used for the air "blank."

Even though the reference (light pipe) side of the instrument was always within scale recording limits, an uncorrected transmittance of air or a sample of greater than 1.0 was possible. To obtain a value within instrument range (0.0 to 1.05) a removable 1.0 ND filter was installed in the light path (F, Fig. 5) in the filter holder. This filter, when needed, reduced the incident light intensity to approximately 0.1 of the original value. The filter was calibrated for each wavelength observed. To convert a transmittance reading with the filter to the one which should have been observed, the reading was divided by the approximate correction (approximately 0.1).

Transmittances were observed at the following wavelengths:

375.0*, 400.0*, 410.0*, 422.2, 432.0, 435.5, 438.6, 444.4, 450.1, 455.9, 461.2, 462.0, 468.7, 477.7, 480.0*, 489.4, 495.2, 510.0*, 515.1, 529.8, 541.4, 544.3, 551.8, 561.9, 564.1, 572.5, 577.3, 584.8, 588.7, 599.6, 600.8, 610.9, 624.2, 627.3*, 630.0*, 645.0, 645.9, 665.0*, 675.0*, 700.0*.

---

*These wavelengths were observed beginning on October 12th and were not used in dominant wavelength, percent purity, or visual efficiency calculations.

2. Particle Distribution

Water particle samples were collected in 100 ml polyethylene bottles. Analysis was performed on a 15-channel Coulter counter (Model T) with a 100μ diameter aperture The range of particle sizes which could be observed was between 1.04μ and 27.6μ.

3. Phosphate

Samples were kept refrigerated until analyzed. The analysis was in accordance with the method of Strickland and Parsons [7, pp. 47-51].

4. Salinity

Salinity samples were collected in standard citrate bottles. Analysis was performed on an Industrial Instruments Corporation (Model RS-7B) induction salinometer.

5. Oxygen

Oxygen samples were analyzed using a modified micro-Winkler analysis [4, pp. J7-J12].

6. Coliform

Analyses for coliform bacteria were performed by the Monterey County Health Department on the samples of October 18th and November 16th. The results give the most probable number (MPN) per 100 ml sample [8, pp. 569-609].

7. Temperature

Surface temperature was measured with a bucket thermometer to an accuracy of ± 0.1°C.

III. DATA ANALYSIS

A. DOMINANT WAVELENGTH, PERCENT PURITY, AND VISUAL EFFICIENCY

Corrected transmittances and chromaticity coordinates were calculated by a computer program. The program also calculated the transmissions per one-meter path-length and the total beam attenuation coefficients at each wavelength observed. Another computer program (see page 121) was written to graph these values as functions of their wavelengths. Sample graphs are on page 117. Chromaticity coordinates were calculated according to the selected ordinate method for 30 observations [5, p. 274].

Tristimulus values (X, Y, and Z) were computed by summing the transmittances of the wavelengths listed in Table II and multiplying by the appropriate factor.

TABLE II

WAVELENGTHS (IN nm) USED FOR SELECTED ORDINATE CALCULATION OF TRISTIMULUS VALUES FOR STANDARD SOURCE A*

	X	Y	Z
	516.9	507.7	424.9
	561.4	529.8	436.0
	576.3	543.7	443.7
	587.2	555.4	450.5
	596.5	566.3	456.8
	605.2	576.9	462.9
	613.8	587.9	469.2
	623.3	600.1	476.8
	635.3	615.2	487.5
	655.9	639.7	508.4
Factor:	.10984	.10000	.03555

---

*Linearly interpolated from the values observed.

X, Y, and Z represent the amount of red, green, and blue, respectively, that make up the color of the sample analyzed. The chromaticity coefficients, x, y, and z (trichromatic coefficients) are the normalized tristimulus values. Percent visual efficiency is the Y tristimulus value multiplied by 100. With x and y, the dominant wavelength was obtained from a large detailed chromaticity diagram.

B. PARTICLE AREA AND VOLUME

Ragweed pollen (19μ - 20μ in diameter) was used to determine that channel "1.5" corresponded to a median particle diameter of 19.5μ on the Coulter counter. From this the particle diameter of each of the 15 channels was found (see Table III).

TABLE III

CHANNEL NUMBER AND PARTICLE DIAMETER (μ)

Channel Number	Diameter (μ)	Channel Number	Diameter (μ)
0	27.6	8	4.34
1	21.9	9	3.45
2	17.4	10	2.74
3	13.8	11	2.17
4	10.9	12	1.72
5	8.69	13	1.37
6	6.90	14	1.09
7	5.47		

A particle area and a volume were calculated for each of the 15 channels on the basis that the particles were all perfect spheres. A computer was programmed to calculate the

area, volume, and totals for each of the samples. See page 119 for an annotated listing of this program. The analysis of all samples is on page 95.

C. CORRELATION AND REGRESSION ANALYSIS

Preliminary correlation of data was done by graphing pairs of variables observed. Further examination was performed with the Naval Postgraeduate School IBM 360/67 computer. A multivariable linear regression analysis program (REGRE) was used. With this program any variable could be selected as the dependent (predicted) variable and any or all of the other variables could be chosen as the independent (predictor) variable(s). Along with F-values, T-values, and regression coefficients, a correlation coefficient was also calculated. The more closely this coefficient approaches ± 1.0, the greater the dependent variable depends upon a particular independent variable.

IV. DISCUSSION

A. DATA SUMMARY AND DISCUSSION

Appendix A is a summary of the data obtained during the observation program. Appendix B lists corrected transmittances and their respective attenuation coefficients as a function of wavelength for each sample analyzed. There are periodic gaps in this data due to equipment failure or sampling problems. The lack of complete data sets somewhat limited the analysis.

Sample dominant wavelength and sample purity agree favorably with values reported by other researchers, especially in the area of the Baltic Sea [2, pp. 144-150]. This data, reported by Jerlov, was based on spectral measurements of either downward irradiance (sensor pointed up) or upward irradiance (sensor pointed down). As the light from the energy source (the sun) becomes less attenuated (observations in shallower water) the dominant wavelength increases. The present study was based on a 1-meter path length exclusively: consequently the values are lower than reported in Jerlov. The purities were lower and the dominant wavelengths longer also, because the samples analyzed were from waters in the near-shore region.

The percent purity of all bottom samples, except 500S and 175N (November 16th), is less than 20 percent. Figure 6, a chromaticity diagram with sample coordinates plotted,

shows a broad range of values of dominant wavelength and purity exist in the areas sampled.

The salinity is 33.5 ± .5 o/oo for almost all the stations regardless of location. There is much mixing going on near the shore where the samples were taken. The mixing is further evidenced by the randomness of particle counts. Heavy particle loads (in the range of 1.09 to 27.6μ) appear frequently in either the surface or bottom samples (see Fig. 7).

Figure 8 relates projected particle area per 2 ml sample and percent purity. As projected particle area increases the percent purity also increases. One explanation is that dominant wavelength is attributable to mechanisms other than scattering. An increase in particle area seems to scatter energy at all wavelengths. The dominant wavelength is affected less than the other wavelengths and its purity is enhanced. Thus as projected particle area increases so does percent purity (of the dominant wavelength). Jerlov, [2, pp. 144-150] refers to the idea that Gelbstoff is largely responsible for color change - especially at longer wavelengths in turbid water. This is further evidenced in Figure 9. Dominant wavelength does not seem highly dependent upon projected particle area. Regardless of the station most dominant wavelength values fall between 560 nm and 585 nm.

The value of the maximum transmittance is very dependent upon projected particle area. Figure 10 is a plot of

projected particle area and maximum transmissions. The curve fits the equation

$$\log_{10}(A \times 10^{-6}) = .544 - .634(\max T)$$

where:

max T = maximum transmittance (m^{-1})

A = projected particle area (μ^2)

The correlation coefficient for this fit is -0.59. This correlation seems to substantiate the observations of Burt [9.] whose work indicates a major factor in maximum transmittance is projected particle area.

The most spacially homogeneous set of data was obtained on November 16th. There is little variation in projected particle area, particle volume, dominant wavelength, percent purity or salinity. On this date the wind was 15 to 20 knots and the swell was 2 - 5 ft. The day was also significant in that the Monterey sewage plant chlorinator was shut-down part of the day. Figure 11 demonstrates the effect of this. Early in the day coliform was low. By 1030, the coliform count was high to the north. At 1250, when the boil was sampled, there was an extremely high coliform count at the outfall. Since the effluent initially rises to the surface above the outfall, the effluent flowed out some distance and by noon had worked back and collected at the base of the outfall. By afternoon the "pulse" of coliform-laden water had moved south, carried by long-shore currents, to yield high values of coliform around 200 m south

of the boil. The phosphate curve gives similar results. Notice, though, that the phosphate at the base of the outfall is considerably lower than the surface sample.

Coliform and phosphate seem to be proportional (Fig. 11). Note that most of these data were obtained with a chlorinator off. Monterey County Health records show that the coliform count around the Monterey outfall is generally quite low (less than 50 MPN per 100 ml sample). In those cases this relationship would not hold.

From Figure 13 it can be seen for the Monterey outfall that, excluding the boil (Station M-1), the highest concentration of phosphate is invariably found at Station M-5, the seaward station. Trumbauer [6] speaks of a coliform concentration gradient on the seaward side of the outfall. This has been associated with a sewage concentration gradient. The high phosphate at Station M-5 seems to reinforce this concept.

Visual efficiency is observed to be inversely related to projected particle area per 2 ml sample (see Fig. 14). The linear correlation coefficient is -.31. Such a relationship is reasonable since the greater the particle area in a water sample, the greater the light scattering. The scattering of the light lowers the transmittance at observed wavelengths and the visual efficiency is lowered.

B. FOREL-ULE SCALE

In order to compare a sample color to the Forel-Ule scale in a quantitative manner, the comparison was made with

dominant wavelength and purity. The dominant wavelengths and purities of the Forel-Ule colors were not available. To obtain these data, solutions of blue (copper sulfate), yellow (potassium chromate), and brown (cobalt sulfate) were mixed according to Sower [3]. Forel-Ule solutions were made by mixing the appropriate quantities of each solution. Apparent color ranged from blue (scale number I) through green (scale number XI), to brown (scale number XXI). Transmittances were measured in a 1-cm cell with a Bausch and Lomb Spectronic 100 spectrophotometer to obtain transmittances at the various wavelengths. As with the Beckman instrument, a correction was made for the differences in the losses due to reflection at the glass-air and glass-water surfaces. For the Pyrex cells used, the value of K was 0.93 ± 0.01.

Chromaticity coordinates were calculated using the previously described programs. In addition, plots were made (by computer) of wavelength and transmittance. Example plots are shown on page 115. Appendix C lists transmittance as a function of wavelength for each of the 21 scale numbers. Figure 15 shows the correlation of Forel-Ule numbers, percent purity, and dominant wavelength.

Approximately 85 percent of the samples analyzed have dominant wavelengths between 570 and 585 nm. This corresponds to Forel-Ule numbers ranging from XI to XVI and is indicative of water with an apparent brownish color. The samples which fall in the "bluer" region do not correlate

with geographic location. One (October 12th, Station M-7) is located at "B" buoy, the most seaward station sampled. The others are found at near-shore stations - either at the surface or bottom.

C. MULTIVARIABLE LINEAR REGRESSION ANALYSIS

In order to analyze the data without filling blank data spaces, analysis was generally performed on either pairs of variables or sets of observations which had the same empty spaces. Three data sets were examined. They are listed, along with the resulting correlation coefficients, in Appendix D.

Linear correlation coefficients indicate dominant wavelength is most closely associated with temperature (correlation coefficient equals .64) and to lesser degrees to phosphate and projected particle area. Percent purity was greatly influenced by both phosphate and projected particle area.

It should be pointed out that this was only a linear analysis. More sophisticated analysis (especially using the logarithms of most of the observed variables). would probably yield higher correlation coefficients and better curve fits.

V. CONCLUSIONS

The water near the Monterey sewage outfall has a dominant wavelength ranging from 570 nm to 585 nm and a purity of 2 to 40 percent. On the basis of dominant wavelength, the water falls between XI and XVI on a Forel-Ule scale. Linear regression analysis correlates dominant wavelength most strongly with temperature and to a lesser extent with phosphate and projected particle area. Percent purity is related to both phosphate and projected particle area.

Maximum transmittance and projected particle area for this study fit the curve described by the equation:

$$\log_{10}(A \times 10^{-6}) = .544 - .634(\max T)$$

where:

max T = maximum transmittance (m^{-1}) and

A = projected particle area (μ^2).

On November 16, 1971, the Monterey sewage plant chlorinator was off for a short time. Due to this, a "pulse" of coliform bacteria was traced providing indications of effluent distribution. The utilization of this technique could be used in other studies.

Dominant wavelength, percent purity, and particle area or volume seem to be poor signatures of sewage effluent from the standpoint of observing (visually) effluent distributions and concentrations. These indicators seem insensitive to the addition of effluents from sewage outfalls.

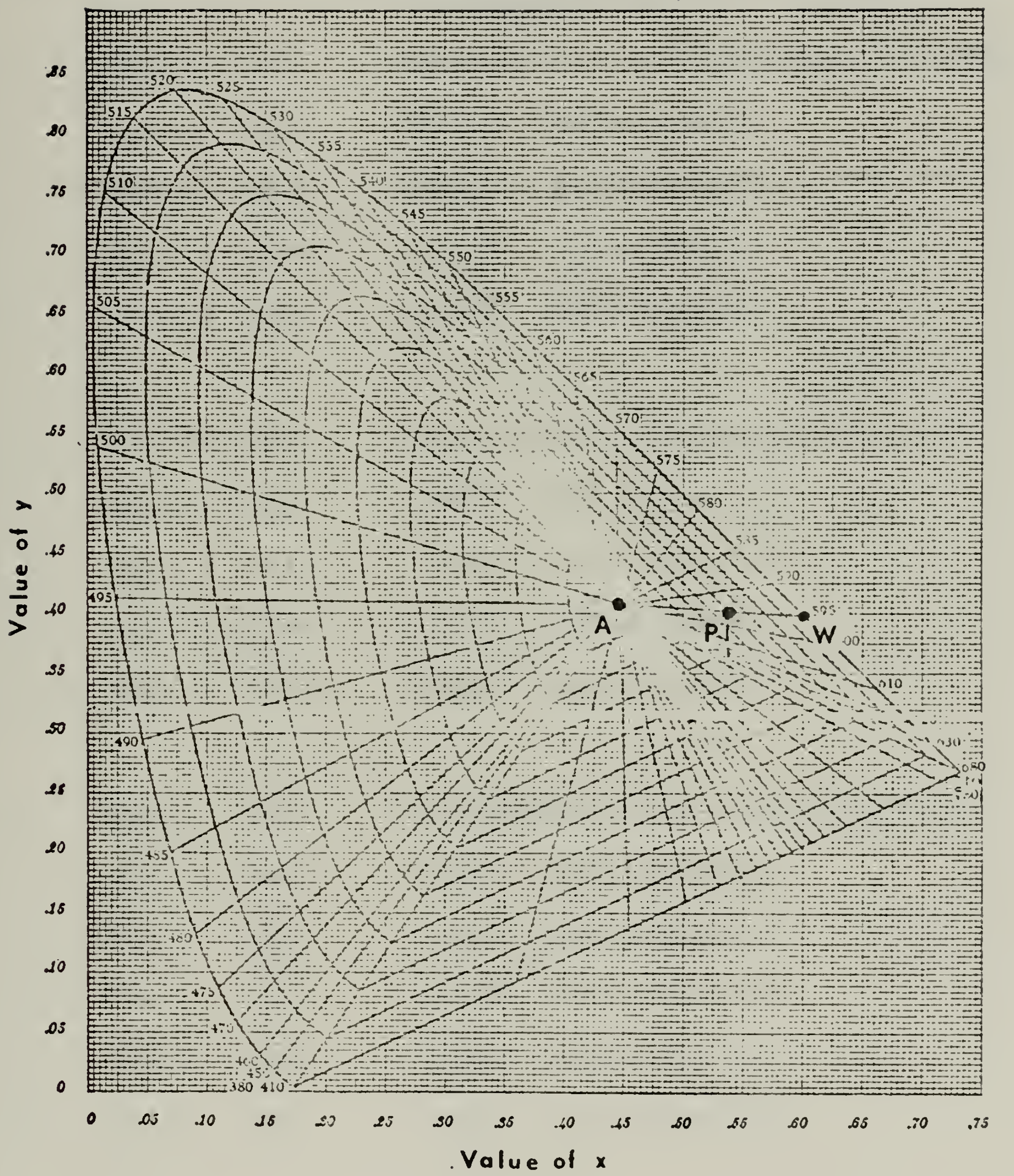


Figure 1. Chromaticity Diagram

TABLE I.

Key to Station Locations for Figures 2 and 3.

Number	Date	Station	Location Latitude x Longitude or direction (°true) and distance (m) from the boil.	
1	Sept 16	M-1	Monterey boil (36°-36.37'Nx121°-52.3'W)	
2	Sept 16	M-2	053.5°	360 m from M-1
3	Sept 16	M-3	242.0°	230 m from M-1
4	Sept 16	M-4	157.8°	180 m from M-1
5	Sept 16	M-5	331.0°	290 m from M-1
6	Sept 28	M-1	Monterey boil (see Sept 16th, M-1)	
7	Sept 28	M-2	057.0°	370 m from M-1
8	Sept 28	M-3	241.5°	200 m from M-1
9	Sept 28	M-4	141.5°	190 m from M-1
10	Sept 28	M-5	332.0°	280 m from M-1
11	Oct 5	M-1	Monterey boil (see Sept 16th, M-1)	
12	Oct 5	M-2	135.5°	370 m from M-1
13	Oct 5	M-3	235.5°	220 m from M-1
14	Oct 5	M-4	142.0°	150 m from M-1
15	Oct 5	M-5	333.5°	310 m from M-1
16	Oct 5	M-6	330.0°	740 m from M-1
17	Oct 12	M-1	Monterey boil (see Sept 16th,M-1)	
18	Oct 12	M-2	041.0°	310 m from M-1
19	Oct 12	M-3	257.5°	220 m from M-1
20	Oct 12	M-4	171.5°	140 m from M-1

21	Oct 12	M-5	336.0°	250 m from M-1
22	Oct 12	M-7	"B"Buoy (36°-39,17'Nx121°-52.9'E)	
23	Oct 18	M-1	Monterey Boil (see sept 16th, M-1)	
24	Oct 18	M-2	077.0°	390 m from M-1
25	Oct 18	M-3	226°	460 m from M-1
26	Oct 18	S-1	Seaside Boil (36°-39.7'Nx121°-51.35'W)	
27	Oct 18	S-2	042.0°	300 m from S-1
28	Oct 18	S-3	225.5°	600 m from S-1
29	Oct 18	PG-1	Pacific Grove Boil (36°-38.47'Nx121°-56.2'W)	
30	Oct 18	PG-2	105.0°	1150 m from PG-1
31	Oct 18	PG-3	217.0°	1080 m from PG-1
32	Nov 16	500N	080.5°	500 m from M-1
33	Nov 16	400N	080.5°	400 m from M-1
34	Nov 16	300N	080.5°	300 m from M-1
35	Nov 16	200N	080.5°	200 m from M-1
36	Nov 16	100N	080.5°	100 m from M-1
37	Nov 16	BOIL	(see Sept 16th, M-1)	
38	Nov 16	100S	260.5°	100 m from M-1
39	Nov 16	200S	260.5°	200 m from M-1
40	Nov 16	300S	260.5°	300 m from M-1
41	Nov 16	400S	260.5°	400 m from M-1
42	Nov 16	500S	260.5°	500 m from M-1

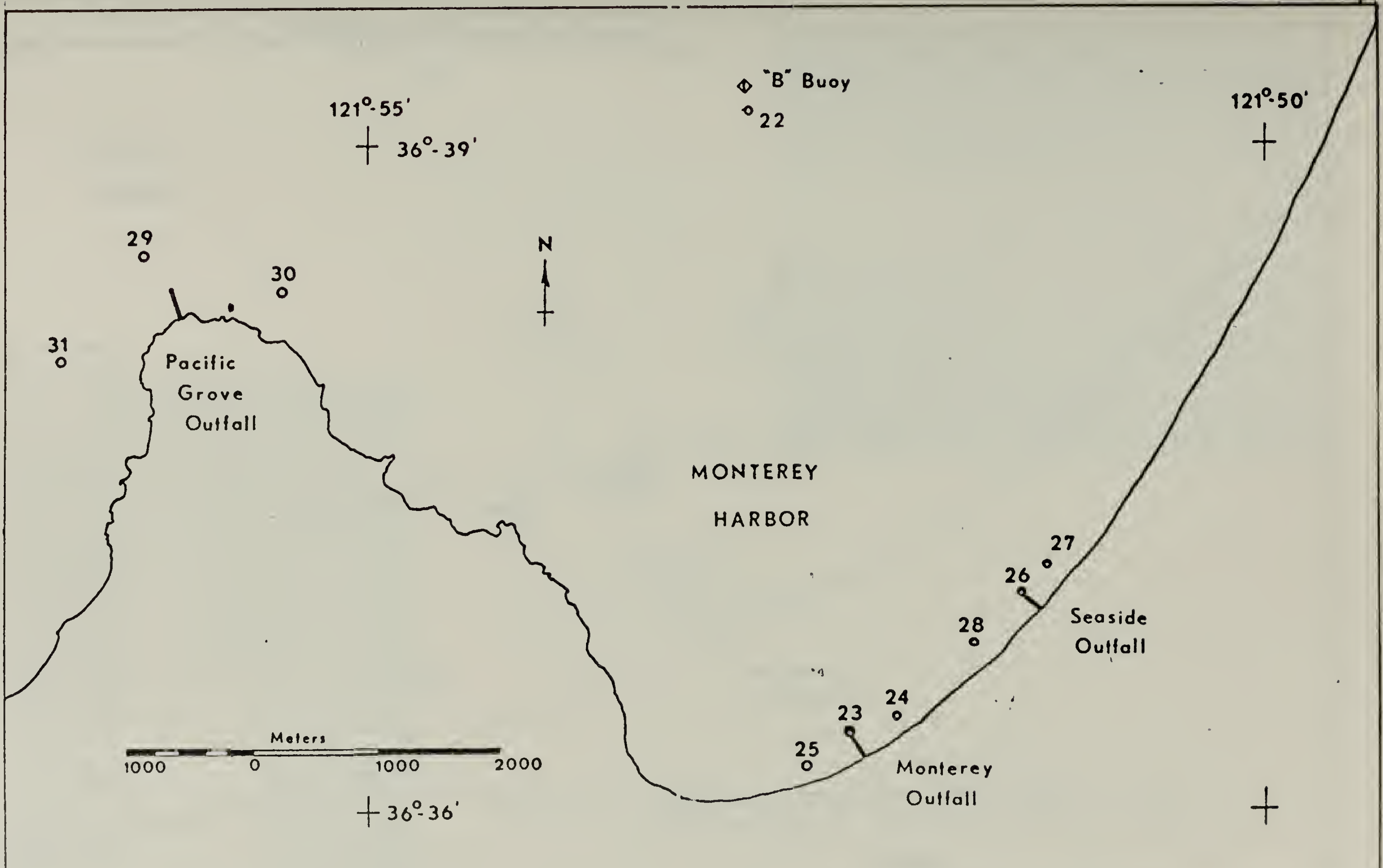


Figure 2. Sampling Locations (See Table I for station key).

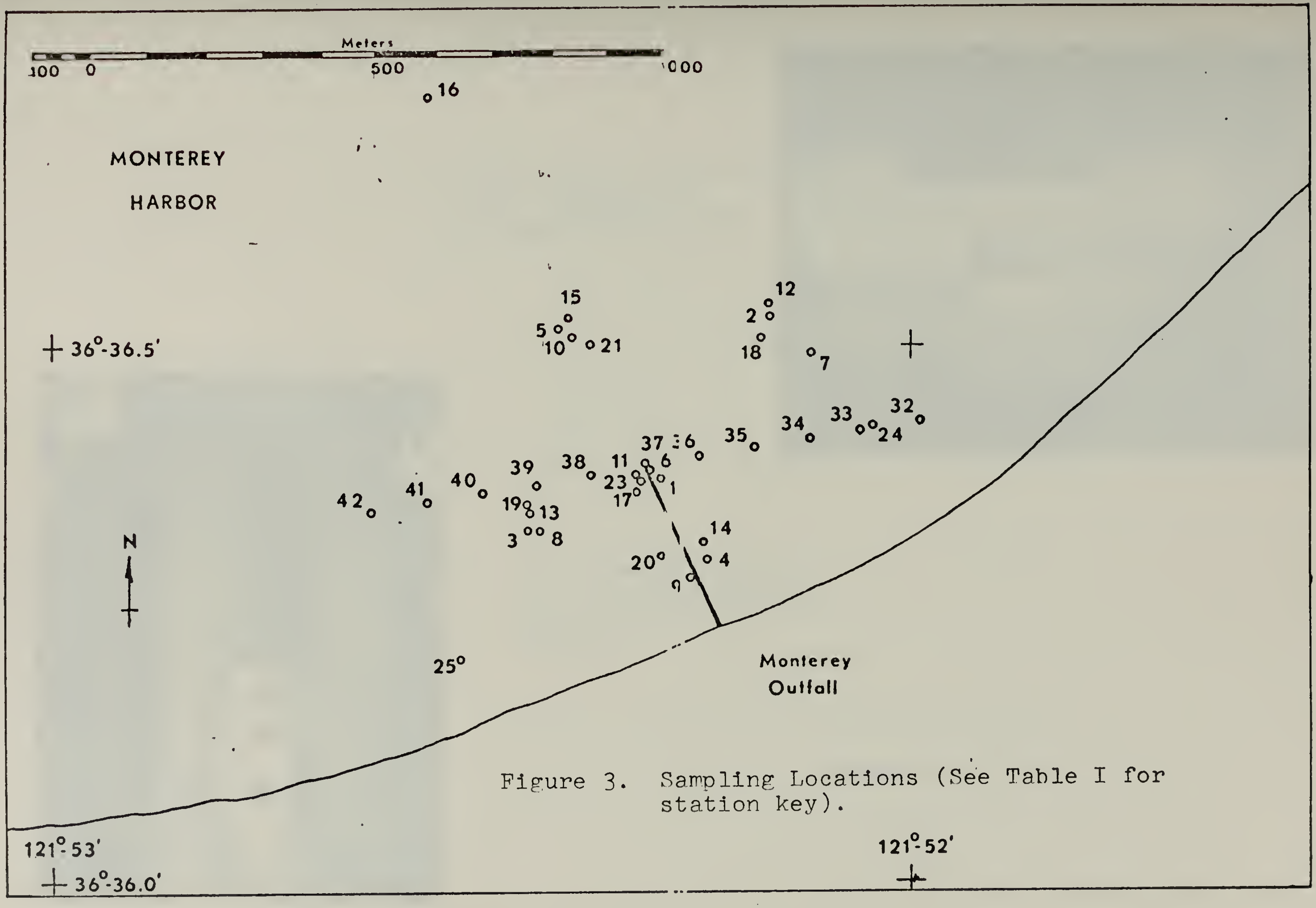
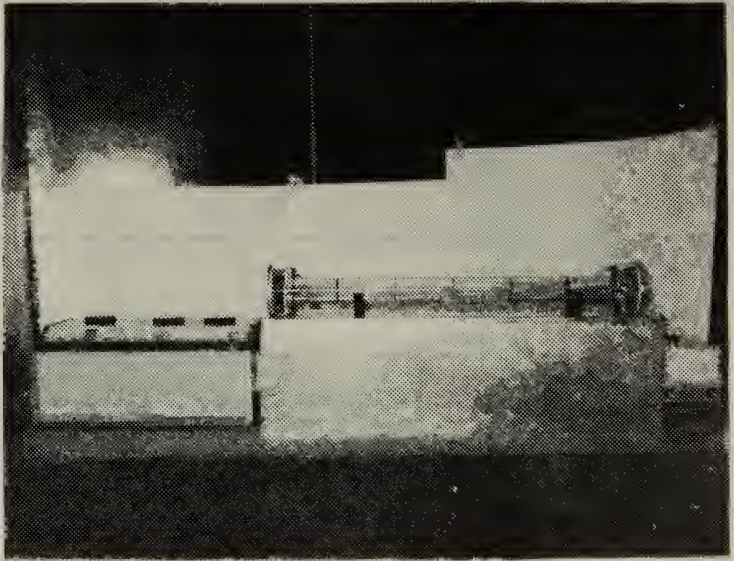
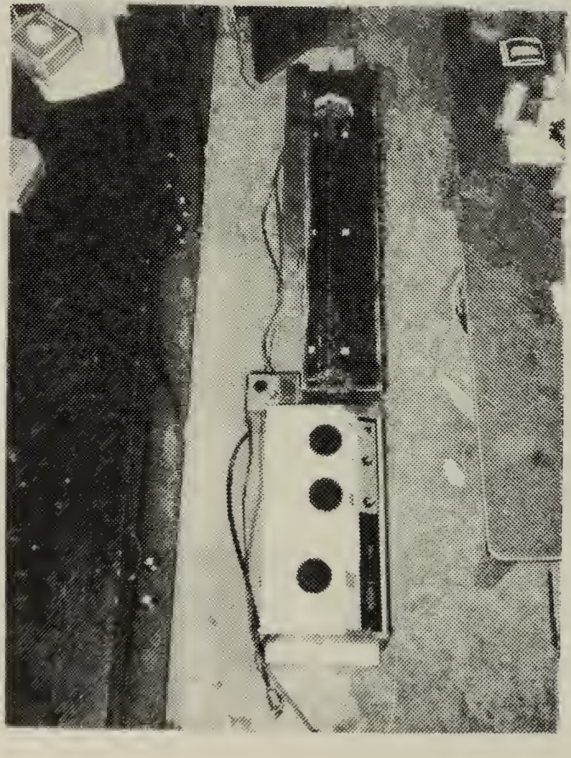


Figure 3. Sampling Locations (See Table I for station key).



a. Front View of Modified DU-2 Spectrometer (cell resting on top of light-tight box).



b. Plan View of Modified DU-2 Spectrophotometer (light-tight lid removed).

Figure 4.

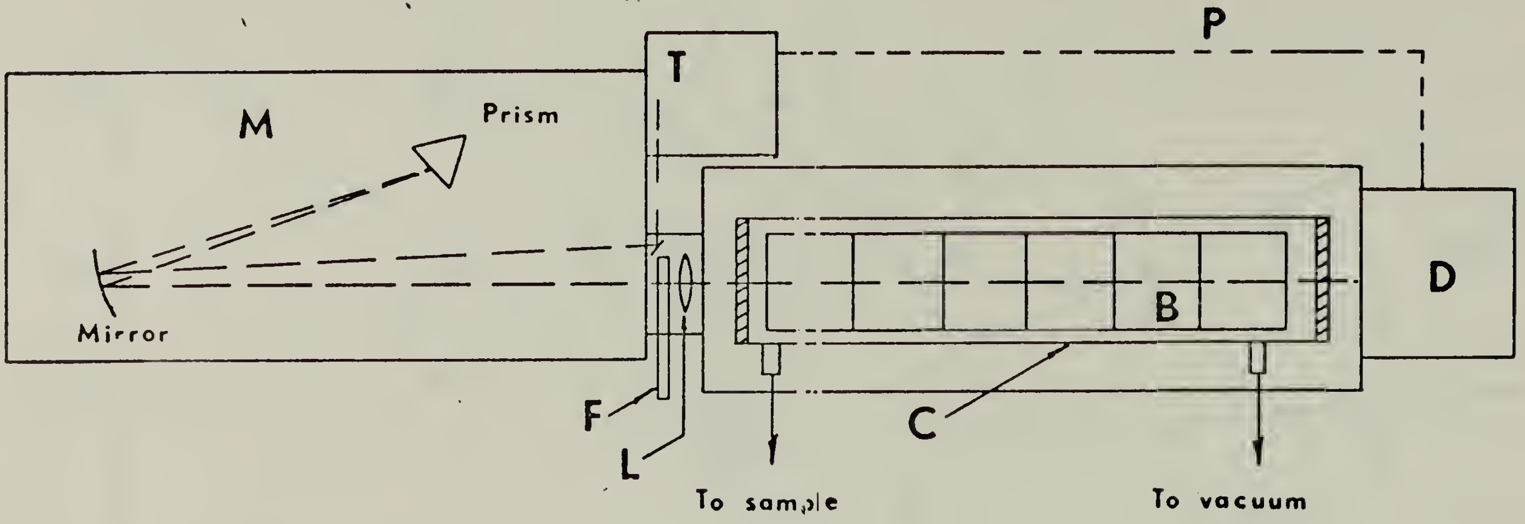


Figure 5. Modified Beckman DU-2 Spectrophotometer.

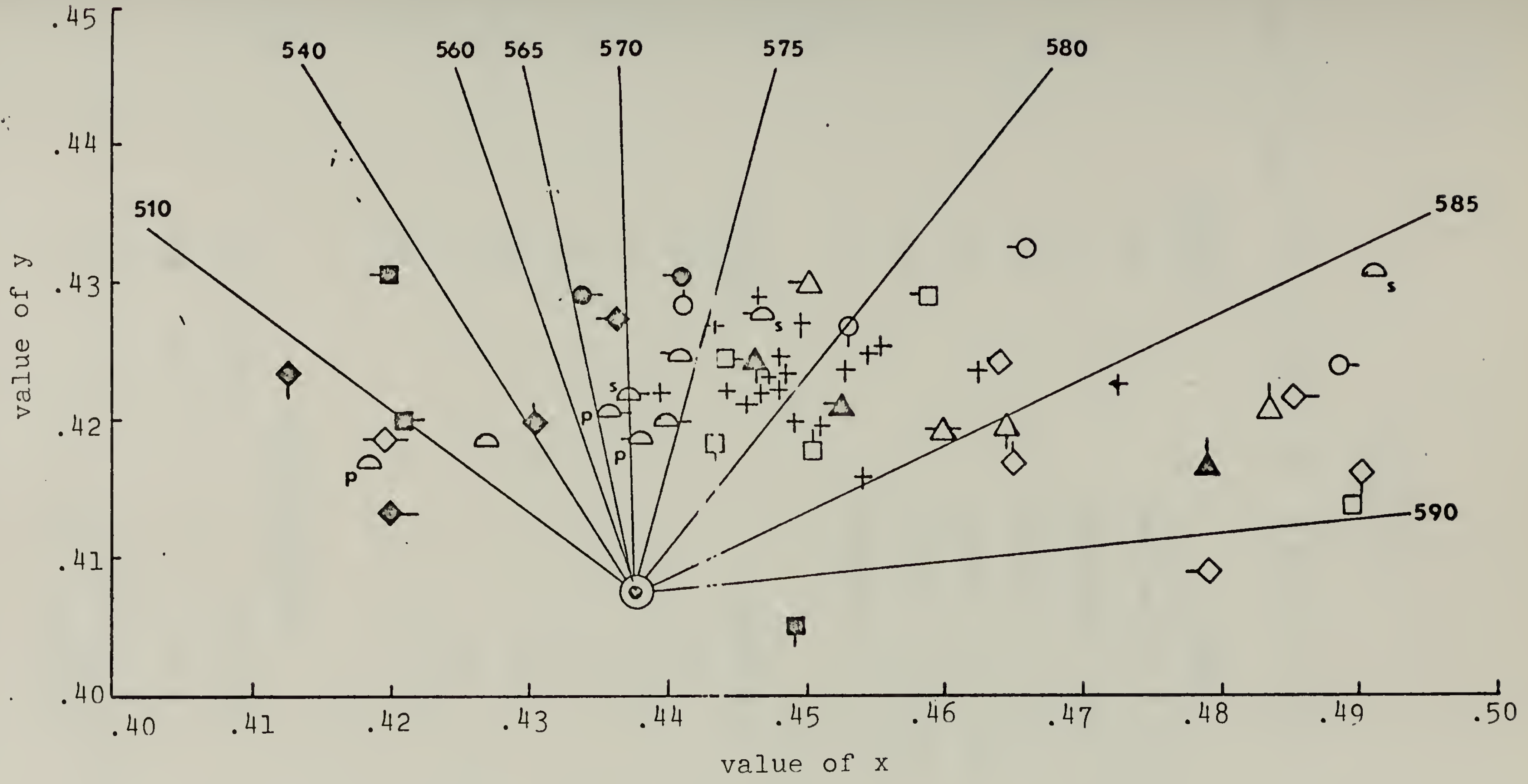


Figure 6. Chromaticity Diagram with Sample Coordinates Plotted.

TABLE IV

Key to symbols for Figures 6 - 8 and 12 - 14.

Symbol	Date
○	September 16, 1971
□	September 28, 1971
△	October 5, 1971
◇	October 12, 1971
⌓	October 18, 1971
+	November 16, 1971

"Flag"	Station
◌	M-1
-◌	M-2
◌-	M-3
◌̍	M-4
◌̩	M-5
-◌-	M-6/M-7

Miscellaneous		
○	(open)	Surface
●	(solid)	Bottom
P		Pacific Grove
S		Seaside

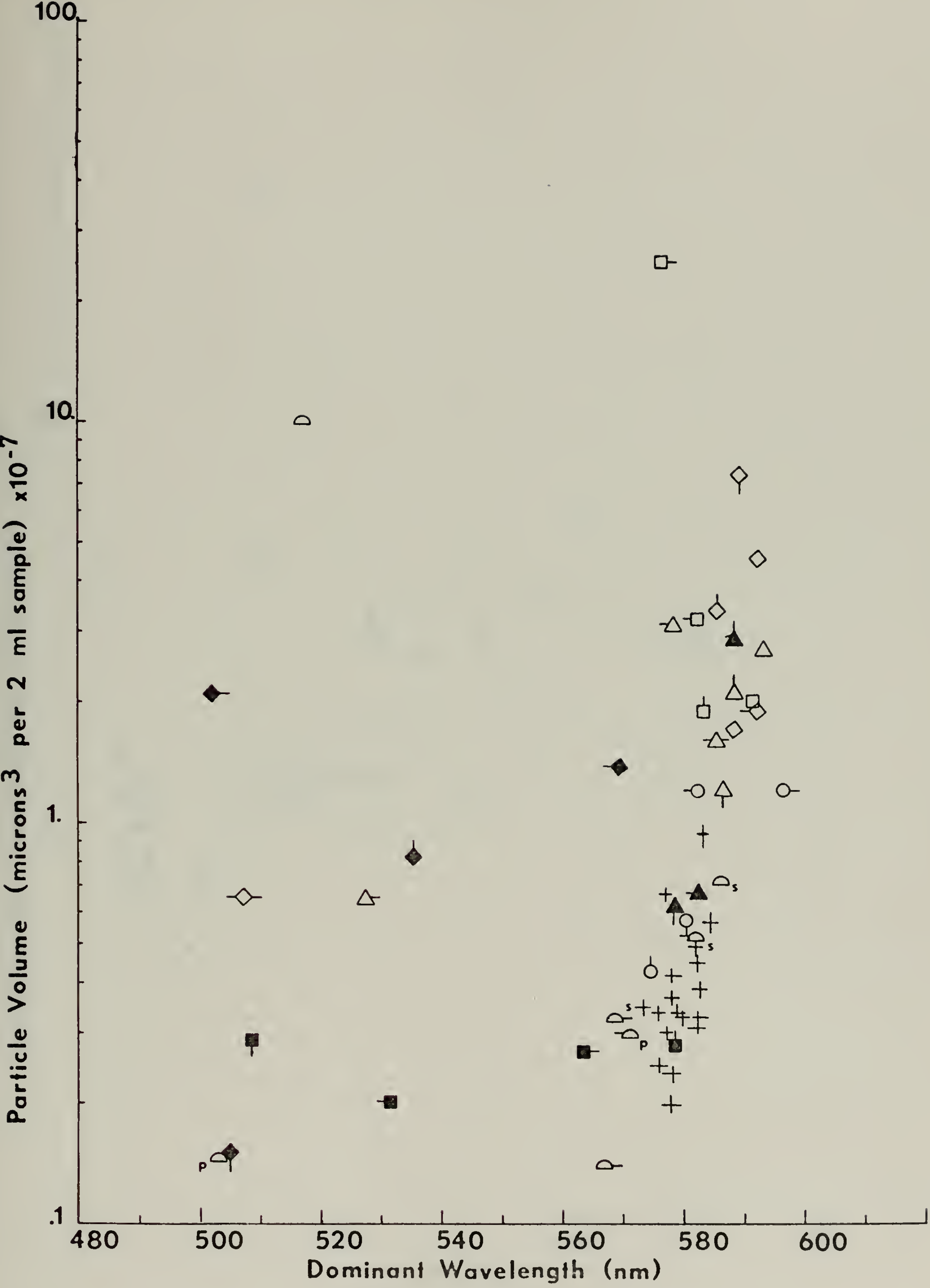


Figure 7. Particle volume as a function of dominant wavelength

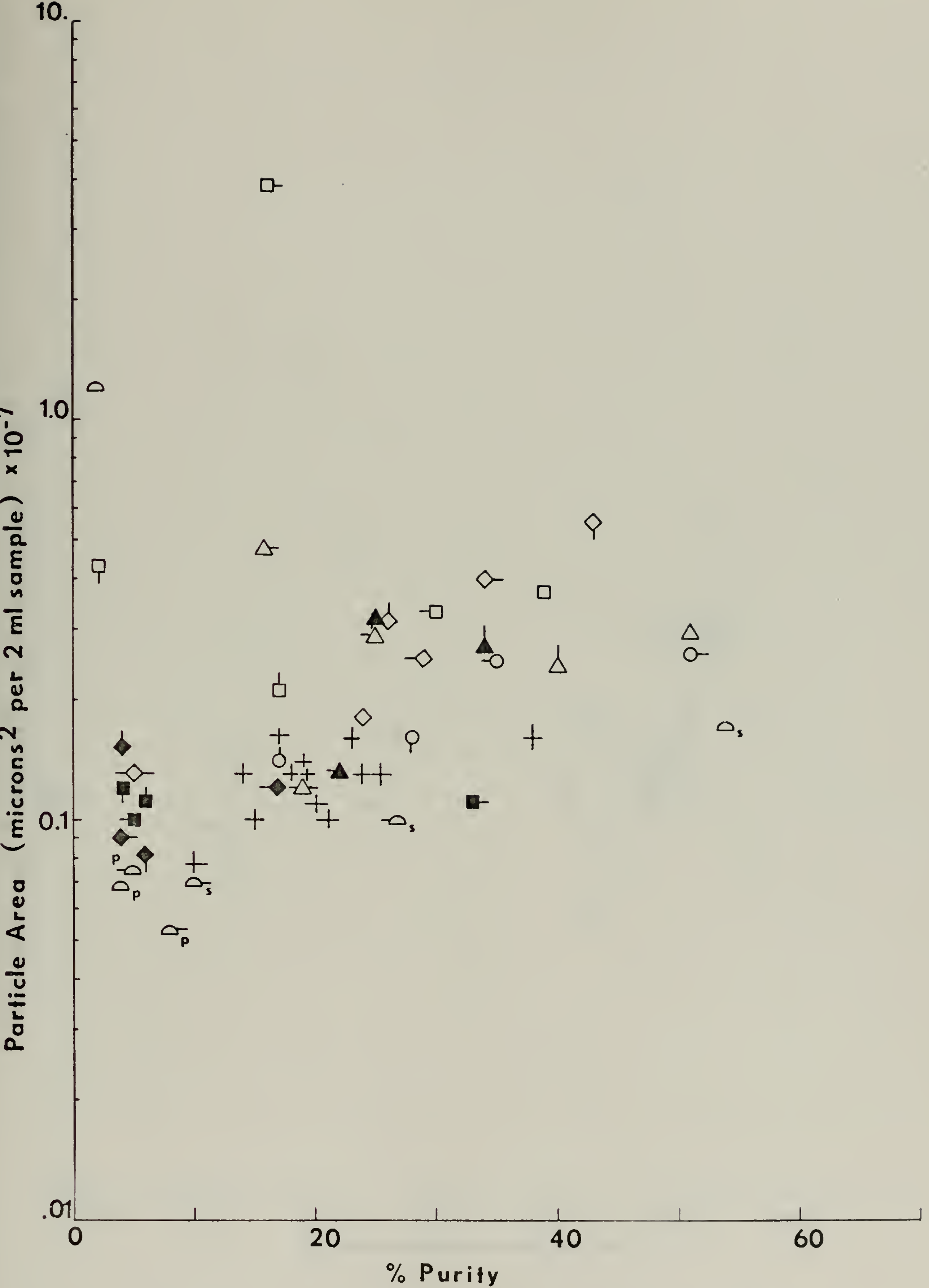


Fig. 8. Projected particle area as a function of % purity

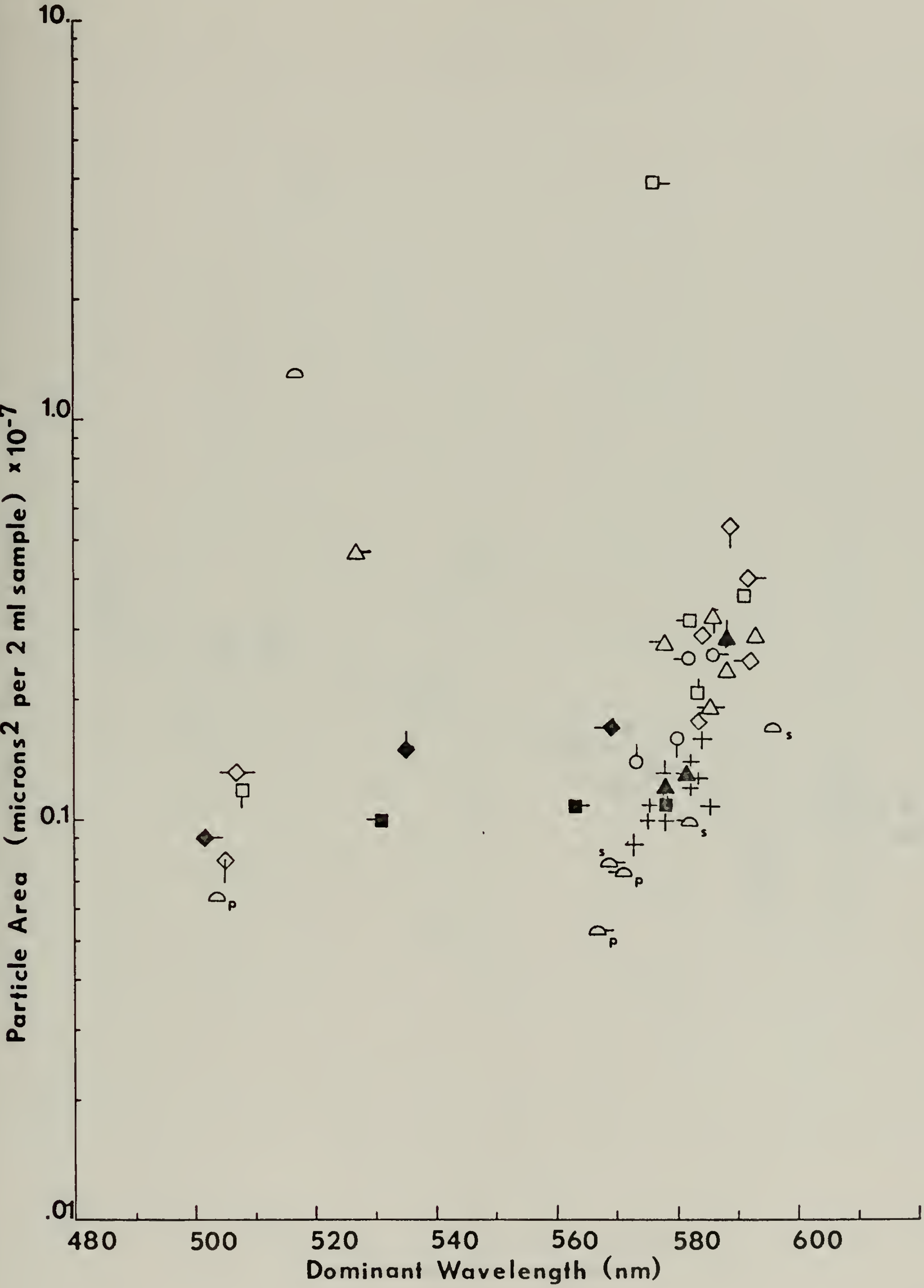


Figure 9. Projected particle area as a function of dominant wavelength

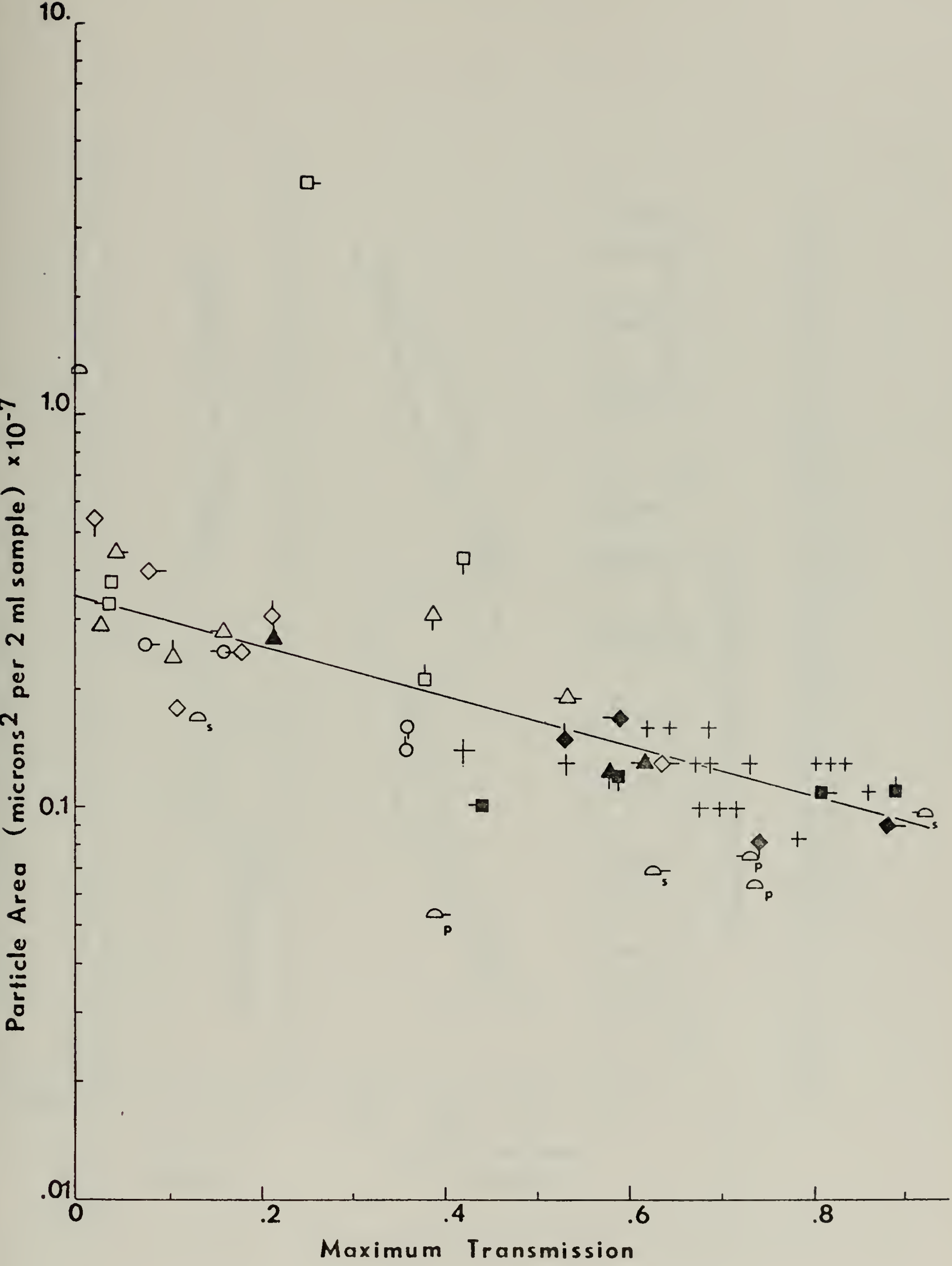


Figure 10. Projected particle area as a function of maximum transmission

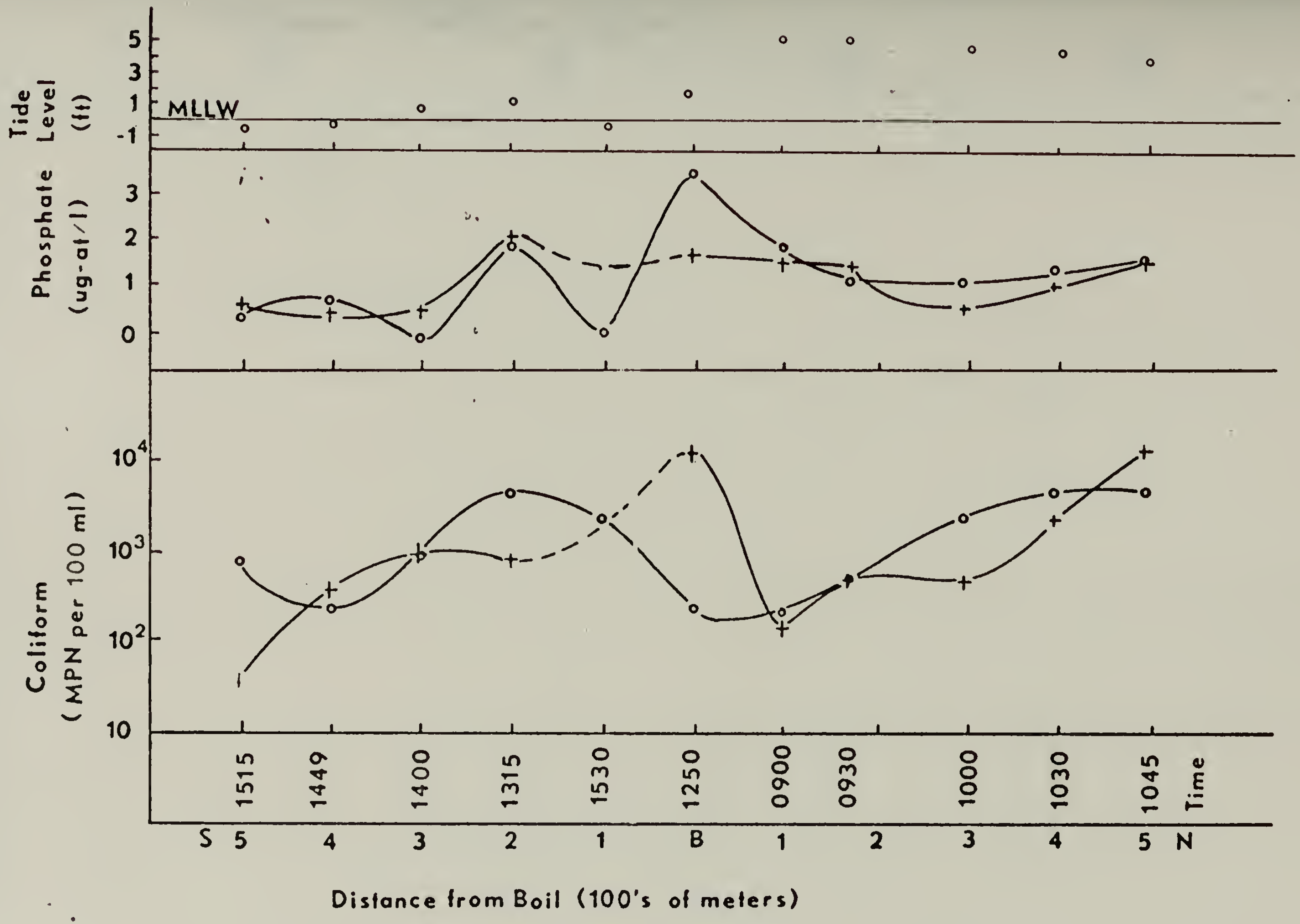


Figure 11. Coliform and Phosphate as a Function of Time and Distance from Boil (November 16).

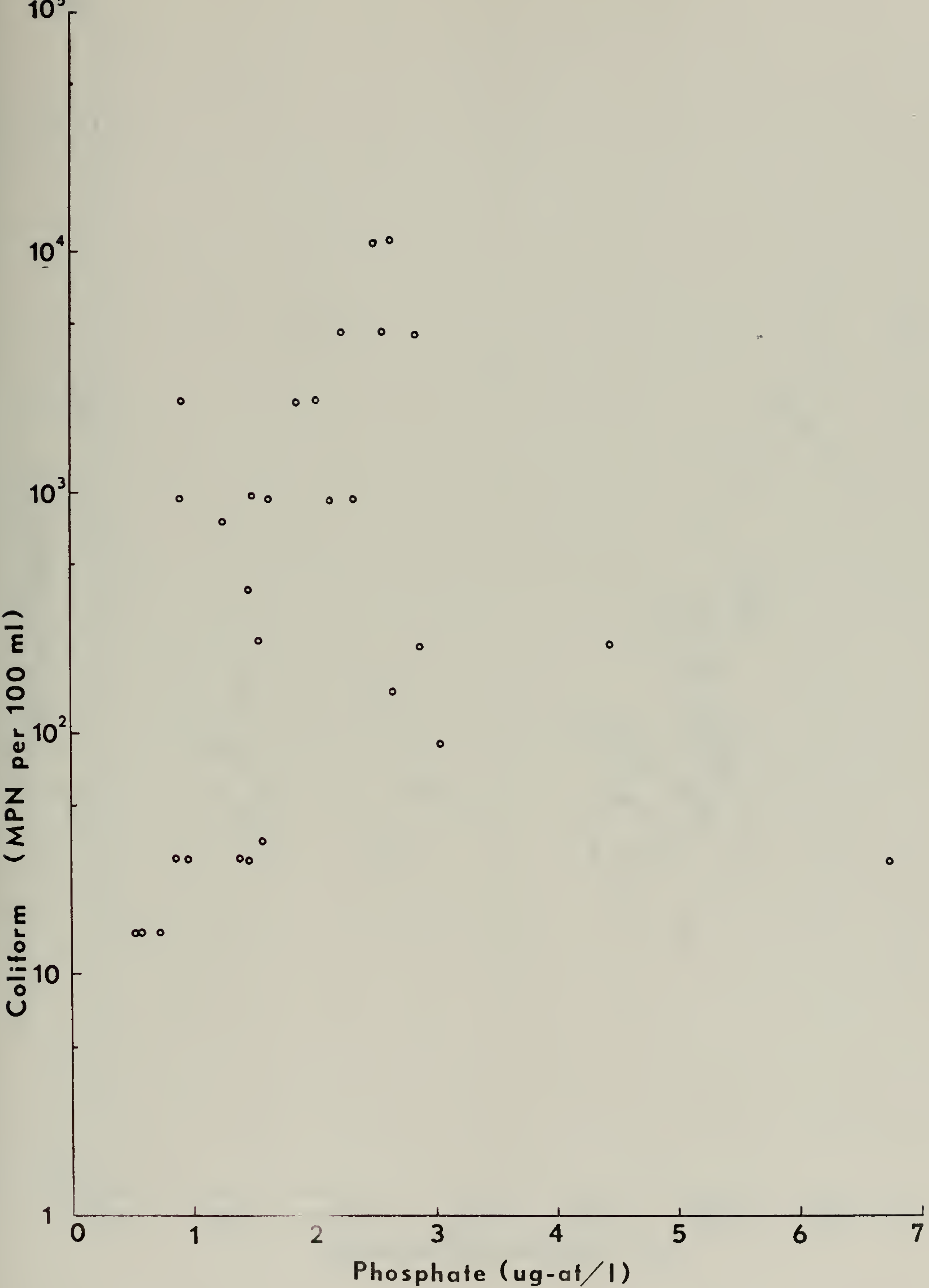


Figure 12. Coliform as a function of phosphate

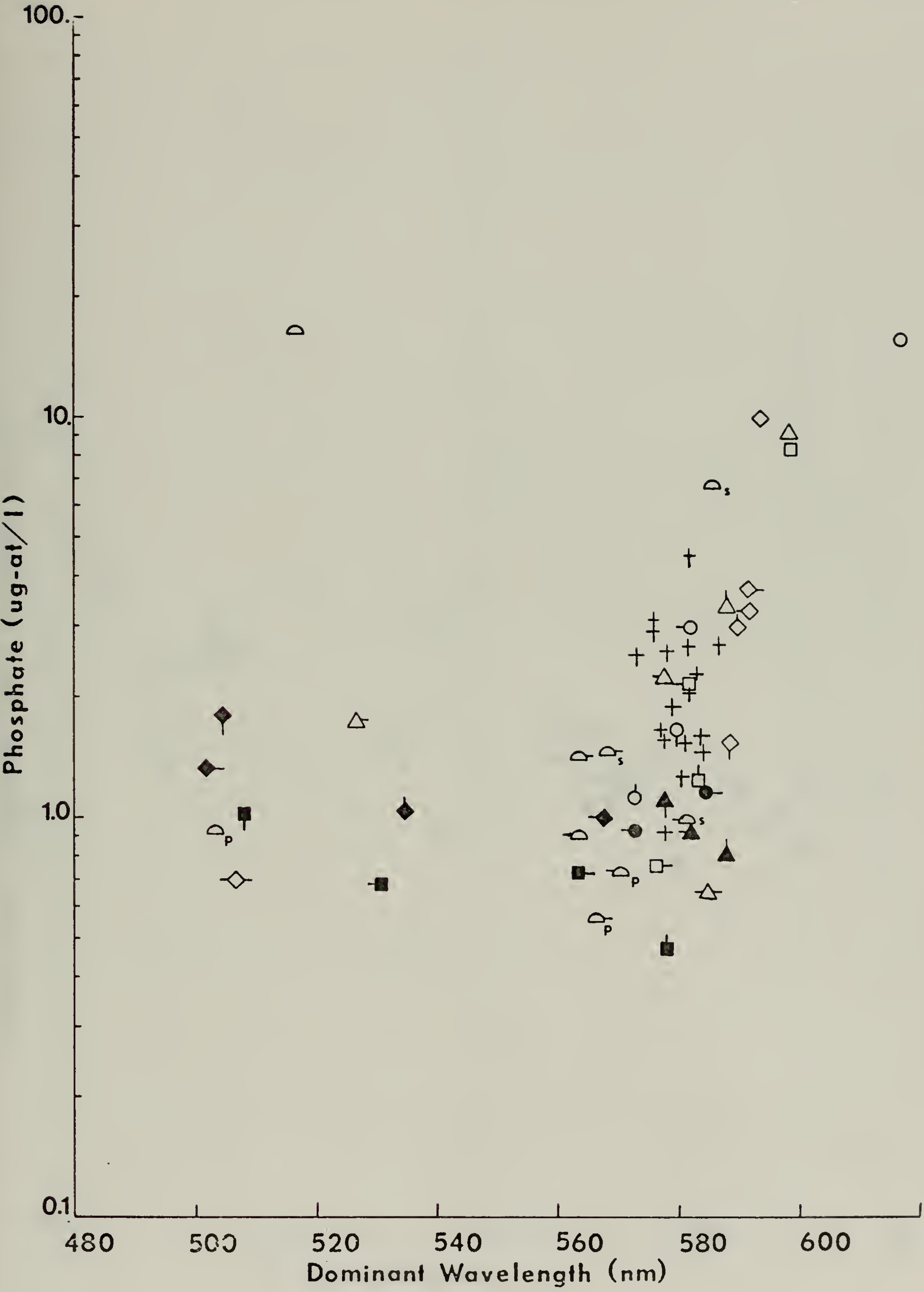


Figure 13. Phosphate as a function of dominant wavelength

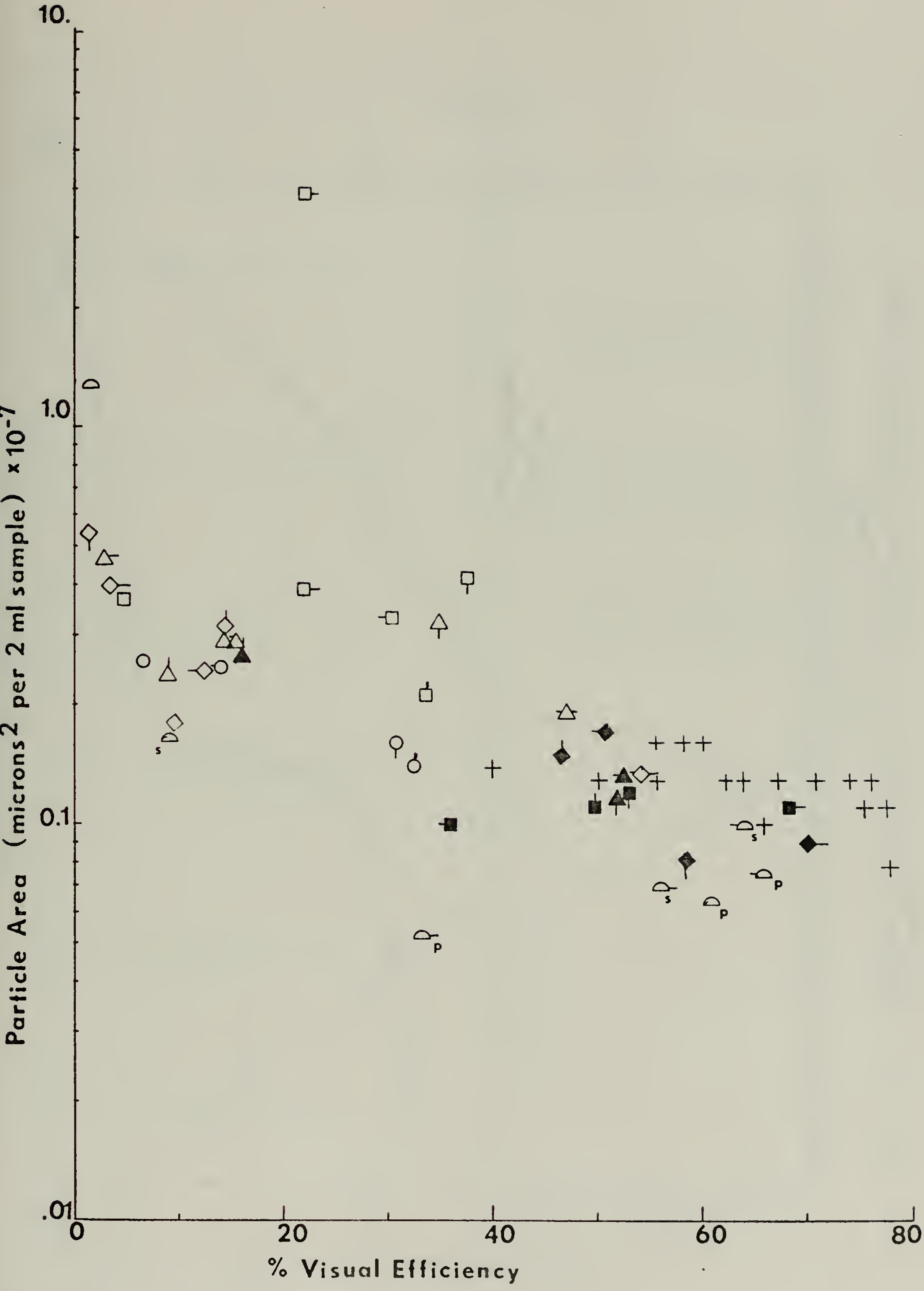


Figure 14. Projected particle area as a function of % visual efficency

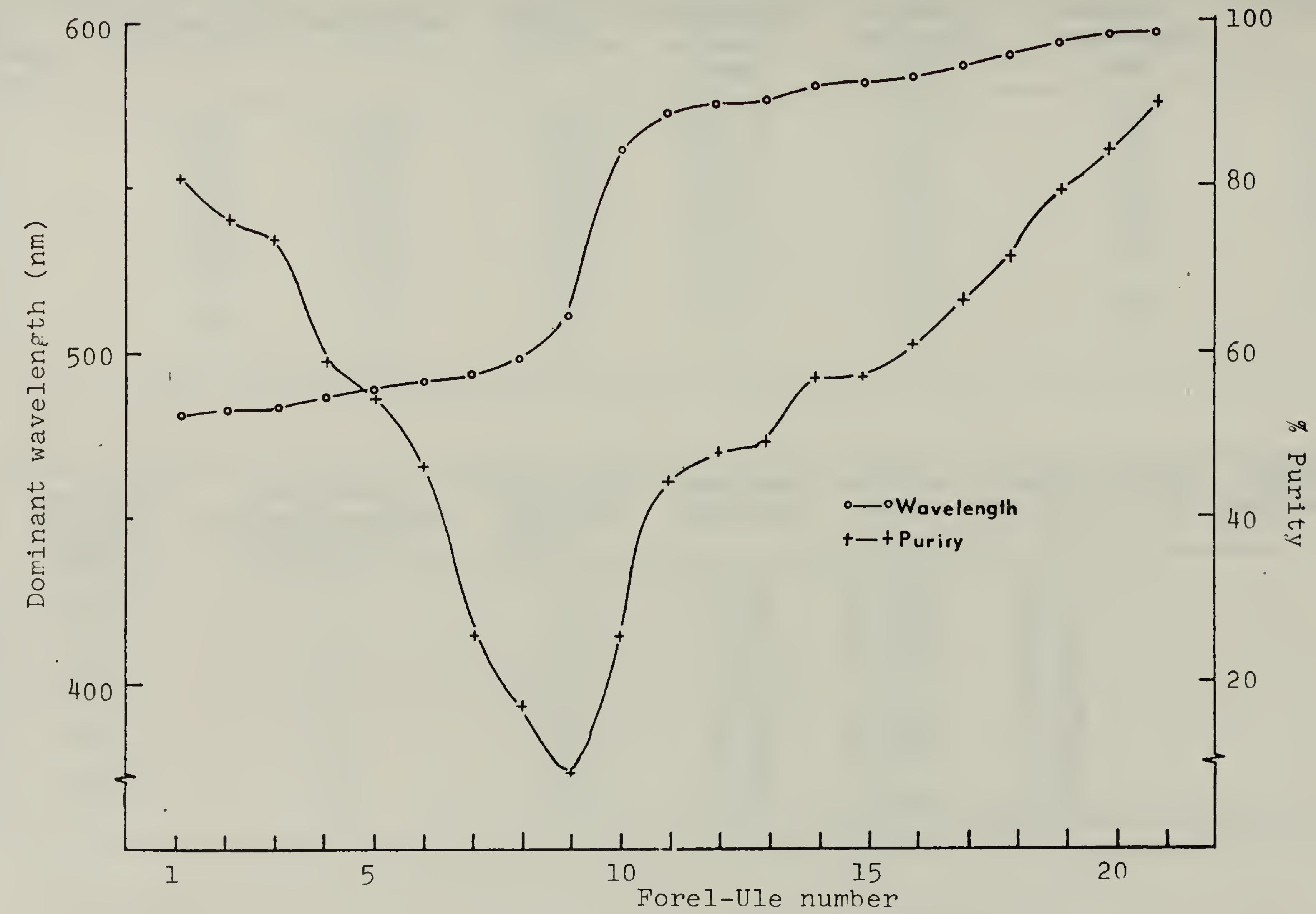


Figure 15. Dominant Wavelength and Purity as a Function Forel-Ule Number.

APPENDIX A - SUMMARY OF DATA

DATE: September 16, 1971

Station (S)-surface (B)-bottom	Chromaticity Coordinates x	y	max T /1.016 m	Wavelength of max T (nm)	Visual Efficiency (%)	Dominant Wavelength (nm)	% Purity
M-1(S)	.6149	.3435	.0004	645.9	0.03	617	70
M-2(S)	.4753	.4315	.1624	584.8	13.8	582	35
M-2(B)	.4507	.4300	.3973	584.8	33.9	573	18
M-3(S)	.4981	.4229	.0768	645.9	6.2	586	51
M-3(B)	.4438	.4293	.4155	584.8	36.0	585	46
M-4(S)	.4507	.4280	.3630	572.5	32.3	573	17
M-4(B)	-	-	-	-	-	-	-
M-5(S)	.4632	.4266	.3610	588.7	30.7	580	28
M-5(B)	-	-	-	-	-	-	-

Station	Local Time/ Location Number	Projected Particle area(μ^2/ 2 ml)x10^{-7}	Particle Vol. (μ^3/2 ml) x10^{-7}	Phosphate (μgmole/l)	Salinity (^{o}/oo)	Oxygen (ml O_2/l)	Temp (°C)	Coliform (MPN/100 ml)
M-1(S)	1320/1	-	-	15.3	31.096	5.47	-	-
M-2(S)	1430/2	0.25	1.2	2.95	33.124	6.43	-	-
M-2(B)	-	-	-	0.92	33.504	5.78	-	-
M-3(S)	1450/3	0.26	1.2	-	32.910	6.69	-	-
M-3(B)	-	-	-	1.15	-	5.34	-	-
M-4(S)	1400/4	0.14	0.43	1.13	33.444	6.18	-	-
M-4(S)	-	-	-	1.44	33.478	5.36	-	-
M-5(S)	1330/5	0.16	0.57	1.67	-	7.42	-	-
M-5(B)	-	-	-	1.56	33.564	5.32	-	-

DATE: September 28, 1971

Station (S)-surface (B)-bottom	Chromaticity Coordinates x	 y	max T /1.016 m	Wavelength of max T (nm)	Visual Efficiency (%)	Dominant Wavelength (nm)	% Purity
M-1(S)	.4997	.4136	.0577	645.9	4.45	591	39
M-2(S)	4691	.4292	.2992	588.7	25.0	582	30
M-2(B)	.4302	.4303	.4423	561.9	35.7	531	5
M-3(S)	.4547	.4242	.2478	572.5	21.8	576	16
M-3(B)	.4307	.4199	.8194	461.2	68.7	563	33
M-4(S)	.4606	.4176	.3877	584.8	33.2	583	17
M-4(B)	.4341	.3848	.8975	461.2	49.3	578	6
M-5(S)	.4539	.4181	.4244	577.3	37.2	623	2
M-5(B)	.4593	.4050	.5904	577.3	52.6	508	4

Station	Local Time/ Location Number	Projected Particle area(μ^2/ 2 ml)x10^{-7}	Particle Vol. (μ^3/2 ml) x10^{-7}	Phosphate (μgmole/l)	Salinity (^{o}/oo)	Oxygen (ml O_2/l)	Temp (^{o}C)	Coliform (MPN/100 ml)
M-1(S)	0812/6	.37	2.0	8.21	33.902	7.20	15.2	-
M-2(S)	0920/7	.33	3.2	2.12	33.256	7.66	15.2	-
M-2(B)	-	.10	0.20	0.659	33.553	8.76	-	-
M-3(S)	0950/8	3.9	25.0	0.743	33.490	7.74	15.3	-
M-3(B)	-	.11	0.27	0.715	33.556	7.60	-	-
M-4(S)	0850/9	.21	1.9	1.20	33.490	8.02	15.0	-
M-4(B)	-	.11	0.28	0.457	33.549	7.25	-	-
M-5(S)	0828/10	.43	5.1	1.34	33.517	8.42	15.2	-
M-5(B)	-	.12	0.29	1.01	33.490	6.31	-	-

DATE: October 5, 1971

Station (S)-surface (B)-bottom	Chromaticity Coordinates x	Chromaticity Coordinates y	max T /1.016 m	Wavelength of max T (nm)	Visual Efficiency (%)	Dominant Wavelength (nm)	% Purity
M-1(S)	.5249	.4079	.0231	610.9	14.3	593	51
M-2(S)	.4604	.4299	.1675	584.8	14.7	578	25
M-2(B)	.4626	.4208	.6212	577.3	54.7	582	22
M-3(S)	.3933	.4778	.0372	572.5	2.83	527	16
M-3(B)	-	-	-	-	-	-	-
M-4(S)	.4943	.4204	.1062	588.7	8.9	588	40
M-4(B)	.4892	.4162	.2132	572.5	15.6	588	34
M-5(S)	.4749	.4192	.3895	588.7	34.4	586	25
M-5(B)	.4560	.4242	.5887	564.1	51.9	578	18
M-6(S)	.4702	.4191	.5345	584.8	46.9	585	24

Station	Local Time/ Location Number	Projected Particle area(μ^2/ 2 ml)x10^{-7}	Particle Vol. (μ^3/2 ml) x10^{-7}	Phosphate (μgmole/l)	Salinity (°/oo)	Oxygen (ml O_2/l)	Temp (°C)	Coliform (MPN/100 ml)
M-1(S)	0830/11	.29	2.2	8.97	31.818	6.72	15.4	-
M-2(S)	0845/12	.28	3.1	2.13	33.491	8.00	15.3	-
M-2(B)		.13	0.66	0.89	33.494	5.86	-	-
M-3(S)	0905/13	.47	6.5	1.69	33.442	7.75	15.6	-
M-3(B)		.14	0.89	0.66	33.479	6.72	-	-
M-4(S)	0915/14	.24	2.1	3.39	33.005	7.00	15.6	-
M-4(B)		.27	2.7	0.77	33.494	7.25	-	-
M-5(S)	0930/15	.32	4.3	1.21	33.453	7.63	15.6	-
M-5(B)		.12	0.62	1.07	33.588	5.15	-	-
M-6(S)	0950/16	.19	1.6	0.64	33.500	8.22	15.6	-

DATE: October 12, 1971

Station (S)-surface (B)-bottom	Chromaticity Coordinates x	y	max T /1.016 m	Wavelength of max T (nm)	Visual Efficiency (%)	Dominant Wavelength (nm)	% Purity
M-1(S)	.4742	.4244	.1191	675	9.4	584	24
M-2(S)	.4895	.4092	.1846	675	12.9	592	29
M-2(B)	.4463	.4273	.5951	588.7	50.5	569	12
M-3(S)	.4954	.4213	.0844	375	3.2	592	34
M-3(B)	.4300	.4134	.8803	461.2	69.7	502	4
M-4(S)	.4748	.4171	.2106	665	14.4	585	26
M-4(B)	.4407	.4198	.5320	577.3	46.2	535	4
M-5(S)	.5007	.4159	.0219	700	1.30	589	43
M-5(B)	.4283	.4232	.7455	529.8	58.1	505	6
M-7(S)	.4294	.4189	.6367	461.2	53.6	507	5

Station	Local Time/ Location Number	Projected Particle area(μ^2/ 2 ml)x10^{-7}	Particle Vol. (μ^3/2 ml) x10^{-7}	Phosphate (μgmole/l)	Salinity (°/oo)	Oxygen (ml O_2/l)	Temp (°C)	Coliform (MPN/100 ml)
M-1(S)	0850/17	.18	1.7	9.83	-	5.73	13.6	-
M-2(S)	0910/18	.25	1.9	3.32	-	7.52	13.6	-
M-2(B)		.17	1.4	0.98	-	5.45	-	-
M-3(S)	0920/19	.40	4.6	3.69	33.226	7.64	13.3	-
M-3(B)		.090	2.1	1.28	33.638	4.27	-	-
M-4(S)	0940/20	.31	3.4	2.93	33.200	7.59	13.9	-
M-4(B)		.15	0.83	1.01	-	7.84	-	-
M-5(S)	0950/21	.55	7.4	1.50	33.513	9.23	-	-
M-5(B)		.081	0.15	1.75	-	3.43	-	-
M-7(S)	1015/22	.13	0.69	0.69	33.587	7.26	13.0	-

DATE: October 18, 1971

Station (S)-surface (B)-bottom	Chromaticity Coordinates x	y	max T /1.016 m	Wavelength of max T (nm)	Visual Efficiency (%)	Dominant Wavelength (nm)	% Purity
M-1(S)	.4369	.4185	.0021	700	0.14	517	2
M-2(S)	.4504	.4247	.6603	588.7	55.7	574	15
M-3(S)	.4499	.4198	.6921	588.7	60.3	574	10
S-1(S)	.5011	.4303	.1310	675.0	9.46	586	54
S-2(S)	.4568	.4275	.9261	588.7	67.3	582	27
S-3(S)	.4470	.4217	.6269	588.7	56.0	569	10
PG-1(S)	.4288	.4173	.7402	700.0	60.5	504	4
PG-2(S)	.4482	.4183	.7372	588.7	65.6	571	5
PG-3(S)	.4455	.4205	.3912	588.7	33.7	567	8

Station	Local Time/ Location Number	Projected Particle area(μ^2/ 2 ml)x10^{-7}	Particle Vol. (μ^3/2 ml) x10^{-7}	Phosphate (μgmole/l)	Salinity (^{o}/oo)	Oxygen (ml O_2/l)	Temp (^{o}C)	Coliform (MPN/100 ml)
M-1(S)	1012/23	1.3	10.0	16.1	33.831	-	-	24,000
M-2(S)	1010/24	-	-	0.89	33.647	-	-	30
M-3(S)	1015/25	-	-	1.40	33.558	-	-	30
S-1(S)	1002/26	0.17	0.72	6.78	33.872	-	-	30
S-2(S)	1000/27	0.099	.51	0.988	33.634	-	-	30
S-3(S)	1005/28	.069	.33	1.45	33.651	-	-	30
PG-1(S)	0900/29	.064	.15	0.594	33.597	-	-	<30
PG-2(S)	0855/30	.075	.30	0.706	33.626	-	-	<30
PG-3(S)	0905/31	.053	.14	0.553	33.605	-	-	<30

DATE: November 16, 1971

Station (S)-surface (B)-bottom	Chromaticity Coordinates x	y	max T /1.016 m	Wavelength of max T (nm)	Visual Efficiency (%)	Dominant Wavelength (nm)	% Purity
500N(S)	.4588	.4228	.9675	599.9	74.3	578	20
500N(B)	.4497	.4214	.8375	572.5	77.1	573	10
400N(S)	.4559	.4208	.7360	577.3	66.5	578	14
400N(B)	.4585	.4243	.6747	577.3	61.3	579	19
300N(S)	.4645	.4249	.6133	588.7	55.7	582	24
300N(B)	.4592	.4269	.7185	577.3	65.7	578	21
175N(S)	.4581	.4221	.6747	577.3	63.1	580	18
175N(B)	.4727	.4234	.5330	599.6	49.3	583	25
100N(S)	.4534	.4265	.8622	588.7	76.7	576	20
100N(B)	.4628	.4232	.7942	572.5	71.4	582	22

Station	Local Time/ Location Number	Projected Particle area(μ^2/ 2 ml)x10^{-7}	Particle Vol. (μ^3/2 ml) x10^{-7}	Phosphate (μgmole/l)	Salinity (°/oo)	Oxygen (ml O_2/l)	Temp (°C)	Coliform (MPN/100 ml)
500N(S)	1045/32	.11	.20	2.57	33.373	-	-	4600
500N(B)		.078	.35	2.51	33.379	-	-	11,000
400N(S)	1030/33	.13	.30	2.24	33.389	-	-	4600
400N(B)		.13	.34	1.87	33.197	-	-	2400
300N(S)	1000/34	.13	.31	2.01	33.477	-	-	2400
300N(B)		.10	.24	1.63	33.450	-	-	930
175N(S)	0930/35	.13	.33	2.11	33.481	-	-	930
175N(B)		.13	.95	2.33	33.451	-	-	930
100N(S)	0900/36	.11	.25	2.88	33.461	-	-	230
100N(B)		-	-	2.67	33.461	-	-	150

DATE: November 16, 1971 (concluded)

Station (S)-surface (B)-bottom	Chromaticity Coordinates x	y	max T /1.016 m	Wavelength of max T (nm)	Visual Efficiency (%)	Dominant Wavelength (nm)	% Purity
BOIL(S)	.4625	.4220	.4253	572.5	39.4	582	19
BOIL(B)	.4566	.4278	.6966	577.3	63.7	577	21
100S(S)	.4605	.4187	.6644	599.6	61.5	583	17
200S(S)	.4594	.4195	.8141	599.6	70.6	582	18
200S(B)	.4544	.4226	.6726	572.5	62.3	576	15
300S(S)	.4577	.4236	.8251	599.6	75.9	578	19
300S(B)	.4657	.4252	.6133	599.6	55.9	581	25
400S(S)	.4566	.4226	.8072	572.5	73.7	578	18
400S(B)	.4644	.4155	.6462	599.6	57.5	584	17
500S(S)	.4548	.4248	.6827	599.6	59.6	582	23
500S(B)	.4827	.4275	.6177	588.7	55.6	584	38

Station	Local Time/ Location Number	Projected Particle area(μ^2/ 2 ml)x10^{-7}	Particle Vol. (μ^3/2 ml) x10^{-7}	Phosphate (μgmole/l)	Salinity (°/oo)	Oxygen (ml O_2/l)	Temp (°C)	Coliform (MPN/100 ml)
BOIL(S)	1250/37	.14	.50	4.41	32.879	-	-	230
BOIL(B)		.10	.67	2.65	33.403	-	-	11,000
100S(S)	1530/38	.13	.38	0.91	33.378	-	-	2,400
200S(S)	1315/39	.13	.33	2.87	33.389	-	-	4,600
200S(B)		.10	.64	3.04	33.441	-	-	91
300S(S)	1400/40	.13	.41	0.90	33.396	-	-	930
300S(B)		-	-	1.50	33.461	-	-	930
400S(S)	1449/41	.13	.37	1.57	33.337	-	-	230
400S(B)		.16	.57	1.44	33.408	-	-	390
500S(S)	1515/42	.16	.45	1.26	33.357	-	-	750
500S(B)		.16	.57	1.58	33.407	-	-	36

DATE: See below

Station (S)-surface (B)-bottom	Chromaticity Coordinates x	y	max T /1.016 m	Wavelength of max T (nm)	Visual Efficiency (%)	Dominant Wavelength (nm)	% Purity
Distilled water							
Sept 28	.358	.472	.6552	422.2	54.5	508	20
Sept 16	.4390	.4047	1.436	461.2	109.2	490	2.2
Oct 5 (1)	.4470	.4134	1.469	450.1	118.0	565	3.0
Oct 5 (2)	.4368	.4186	1.388	461.2	118.0	520	2
Oct 12	.4200	.4180	1.254	461.2	99.4	503	6
Nov 16	.4276	.4189	1.346	461.2	121.7	507	4

Station	Local Time/ Location Number	Projected Particle area(μ^2/ 2 ml)x10^{-7}	Particle Vol. (μ^3/2 ml) x10^{-7}	Phosphate (μgmole/l)	Salinity (°/oo)	Oxygen (ml O_2/l)	Temp (°C)	Coliform (MPN/100 ml)

APPENDIX B

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Wave-length (nm)	DISTILLED H2O		MONTEREY OUTFALL STA M-1(S)		MONTEREY OUTFALL STA M-2(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0						
400.0						
410.0						
422.2	0.6552E 00	0.4161E 00	0.1344E-03	0.8774E 01	0.6519E-01	0.2688E 01
432.0	0.5267E 00	0.6310E 00	0.1115E-03	0.8958E 01	0.6744E-01	0.2654E 01
435.5	0.5255E 00	0.6332E 00	0.1067E-03	0.9001E 01	0.7256E-01	0.2582E 01
438.6	0.4887E 00	0.7047E 00	0.1050E-03	0.9017E 01	0.7139E-01	0.2598E 01
444.4	0.4008E 00	0.8999E 00	0.8685E-04	0.9204E 01	0.6817E-01	0.2643E 01
450.1	0.4650E 00	0.7537E 00	0.9768E-04	0.9088E 01	0.7668E-01	0.2528E 01
455.9	0.5657E 00	0.5606E 00	0.6083E-04	0.9555E 01	0.7726E-01	0.2520E 01
461.2	0.5426E 00	0.6017E 00	0.5730E-04	0.9613E 01	0.8824E-01	0.2389E 01
462.0	0.5962E 00	0.5090E 00	0.6480E-04	0.9492E 01	0.8360E-01	0.2443E 01
468.7	0.5451E 00	0.5973E 00	0.1172E-03	0.8909E 01	0.8850E-01	0.2387E 01
477.7	0.5870E 00	0.5244E 00	0.1186E-03	0.8898E 01	0.9249E-01	0.2343E 01
480.0						
489.4	0.6028E 00	0.4982E 00	0.1264E-03	0.8835E 01	0.9920E-01	0.2274E 01
495.2	0.5681E 00	0.5566E 00	0.1788E-03	0.8493E 01	0.1031E 00	0.2236E 01
510.0						
515.1	0.5857E 00	0.5265E 00	0.1827E-03	0.8472E 01	0.1139E 00	0.2139E 01
529.8	0.5857E 00	0.5266E 00	0.1830E-03	0.8470E 01	0.1367E 00	0.1959E 01
541.4	0.5857E 00	0.5265E 00	0.2398E-03	0.8204E 01	0.1457E 00	0.1896E 01
544.3	0.5749E 00	0.5449E 00	0.2358E-03	0.8221E 01	0.1433E 00	0.1912E 01
551.8	0.5628E 00	0.5659E 00	0.2337E-03	0.8230E 01	0.1449E 00	0.1901E 01
561.9	0.5652E 00	0.5615E 00	0.2363E-03	0.8219E 01	0.1536E 00	0.1844E 01
564.1	0.5846E 00	0.5284E 00	0.3029E-03	0.7975E 01	0.1533E 00	0.1846E 01
572.5	0.6048E 00	0.4949E 00	0.3108E-03	0.7949E 01	0.1598E 00	0.1805E 01
577.3	0.5999E 00	0.5030E 00	0.3086E-03	0.7956E 01	0.1598E 00	0.1805E 01
584.8	0.6038E 00	0.4966E 00	0.3236E-03	0.7910E 01	0.1624E 00	0.1789E 01
588.7	0.6285E 00	0.4571E 00	0.3343E-03	0.7877E 01	0.1591E 00	0.1809E 01
599.6	0.5717E 00	0.5503E 00	0.2864E-03	0.8030E 01	0.1111E 00	0.2162E 01
600.8	0.5314E 00	0.6222E 00	0.2956E-03	0.7999E 01	0.1094E 00	0.2178E 01
610.9	0.4694E 00	0.7443E 00	0.3700E-03	0.7777E 01	0.1174E 00	0.2109E 01
624.2	0.4456E 00	0.7957E 00	0.3021E-03	0.7977E 01	0.1052E 00	0.2216E 01
627.3	0.5845E 00	0.5285E 00	0.3824E-03	0.7745E 01	0.1300E 00	0.2008E 01
630.0						
645.0						
645.9	0.5877E 00	0.5231E 00	0.4168E-03	0.7660E 01	0.1441E 00	0.1907E 01
665.0						
675.0						
700.0						

Wave-length (nm)	MONTEREY OUTFALL STA M-2(B) TRANSMISSION	MONTEREY OUTFALL STA M-2(B) ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-3(S) TRANSMISSION	MONTEREY OUTFALL STA M-3(S) ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-3(B) TRANSMISSION	MONTEREY OUTFALL STA M-3(B) ATT. COEF. (1/m)
375.0						
400.0						
410.0						
422.2	0.2386E 00	0.1411E 01	0.2285E-01	0.3719E 01	0.2493E 00	0.1367E 01
432.0	0.2335E 00	0.1432E 01	0.2397E-01	0.3672E 01	0.2581E 00	0.1333E 01
435.5	0.2417E 00	0.1398E 01	0.2561E-01	0.3607E 01	0.2721E 00	0.1281E 01
438.6	0.2226E 00	0.1479E 01	0.2520E-01	0.3623E 01	0.2661E 00	0.1303E 01
444.4	0.2284E 00	0.1453E 01	0.2605E-01	0.3590E 01	0.2575E 00	0.1335E 01
450.1	0.2598E 00	0.1326E 01	0.2882E-01	0.3491E 01	0.2789E 00	0.1257E 01
455.9	0.2786E 00	0.1258E 01	0.2981E-01	0.3458E 01	0.3017E 00	0.1179E 01
461.2	0.2922E 00	0.1211E 01	0.3323E-01	0.3351E 01	0.3232E 00	0.1112E 01
462.0	0.2735E 00	0.1276E 01	0.3370E-01	0.3337E 01	0.3117E 00	0.1147E 01
468.7	0.2819E 00	0.1246E 01	0.3634E-01	0.3263E 01	0.3218E 00	0.1116E 01
477.7	0.2739E 00	0.1275E 01	0.3795E-01	0.3220E 01	0.3214E 00	0.1117E 01
480.0						
489.4	0.2648E 00	0.1308E 01	0.4107E-01	0.3142E 01	0.3267E 00	0.1101E 01
495.2	0.2987E 00	0.1189E 01	0.4352E-01	0.3085E 01	0.3481E 00	0.1039E 01
510.0						
515.1	0.3117E 00	0.1147E 01	0.4384E-01	0.3078E 01	0.3507E 00	0.1031E 01
529.8	0.3636E 00	0.9957E 00	0.5491E-01	0.2856E 01	0.3984E 00	0.9059E 00
541.4	0.3825E 00	0.9460E 00	0.6115E-01	0.2750E 01	0.4064E 00	0.8861E 00
544.3	0.3691E 00	0.9810E 00	0.6191E-01	0.2738E 01	0.3992E 00	0.9039E 00
551.8	0.3629E 00	0.9977E 00	0.6253E-01	0.2728E 01	0.3974E 00	0.9083E 00
561.9	0.3662E 00	0.9888E 00	0.6556E-01	0.2682E 01	0.3945E 00	0.9154E 00
564.1	0.3810E 00	0.9496E 00	0.6724E-01	0.2657E 01	0.4016E 00	0.8978E 00
572.5	0.3891E 00	0.9290E 00	0.7024E-01	0.2614E 01	0.4090E 00	0.8799E 00
577.3	0.3864E 00	0.9360E 00	0.6912E-01	0.2630E 01	0.4073E 00	0.8840E 00
584.8	0.3973E 00	0.9084E 00	0.7248E-01	0.2583E 01	0.4155E 00	0.8645E 00
588.7	0.3891E 00	0.9290E 00	0.7422E-01	0.2560E 01	0.3998E 00	0.9023E 00
599.6	0.2549E 00	0.1345E 01	0.5671E-01	0.2825E 01	0.2841E 00	0.1238E 01
600.8	0.2500E 00	0.1364E 01	0.5320E-01	0.2887E 01	0.2743E 00	0.1273E 01
610.9	0.2527E 00	0.1354E 01	0.5921E-01	0.2782E 01	0.2210E 00	0.1486E 01
624.2	0.2704E 00	0.1287E 01	0.5891E-01	0.2787E 01	0.2855E 00	0.1234E 01
627.3	0.3066E 00	0.1164E 01	0.6183E-01	0.2740E 01	0.3015E 00	0.1180E 01
630.0						
645.0						
645.9	0.3233E 00	0.1111E 01	0.7682E-01	0.2526E 01	0.3376E 00	0.1069E 01
665.0						
675.0						
700.0						

Wave-length (nm)	MONTEREY OUTFALL STA M-4(S) TRANSMISSION	MONTEREY OUTFALL STA M-4(S) ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-5(S) TRANSMISSION	MONTEREY OUTFALL STA M-5(S) ATT. COEF. (1/m)
375.0				
400.0				
410.0				
422.2	0.2486E 00	0.1370E 01	0.1902E 00	0.1634E 01
432.0	0.2419E 00	0.1397E 01	0.1873E 00	0.1649E 01
435.5	0.2460E 00	0.1380E 01	0.1931E 00	0.1618E 01
438.6	0.2325E 00	0.1436E 01	0.1947E 00	0.1610E 01
444.4	0.2223E 00	0.1480E 01	0.1872E 00	0.1649E 01
450.1	0.2442E 00	0.1388E 01	0.2086E 00	0.1543E 01
455.9	0.2372E 00	0.1416E 01	0.2239E 00	0.1473E 01
461.2	0.2653E 00	0.1306E 01	0.2372E 00	0.1416E 01
462.0	0.2689E 00	0.1293E 01	0.2333E 00	0.1433E 01
468.7	0.2673E 00	0.1299E 01	0.2468E 00	0.1377E 01
477.7	0.2579E 00	0.1334E 01	0.2312E 00	0.1441E 01
480.0				
489.4	0.2818E 00	0.1247E 01	0.2452E 00	0.1384E 01
495.2	0.3004E 00	0.1184E 01	0.2659E 00	0.1304E 01
510.0				
515.1	0.3020E 00	0.1178E 01	0.2630E 00	0.1314E 01
529.8	0.3502E 00	0.1033E 01	0.3026E 00	0.1177E 01
541.4	0.3525E 00	0.1026E 01	0.3201E 00	0.1121E 01
544.3	0.3514E 00	0.1029E 01	0.3208E 00	0.1119E 01
551.8	0.3483E 00	0.1038E 01	0.3173E 00	0.1130E 01
561.9	0.3343E 00	0.1078E 01	0.3319E 00	0.1085E 01
564.1	0.3489E 00	0.1036E 01	0.3399E 00	0.1062E 01
572.5	0.3630E 00	0.9973E 00	0.3518E 00	0.1028E 01
577.3	0.3598E 00	0.1006E 01	0.3444E 00	0.1049E 01
584.8	0.3585E 00	0.1010E 01	0.3507E 00	0.1031E 01
588.7	0.3544E 00	0.1021E 01	0.3610E 00	0.1003E 01
599.6	0.2555E 00	0.1343E 01	0.2933E 00	0.1207E 01
600.8	0.2483E 00	0.1371E 01	0.2784E 00	0.1258E 01
610.9	0.2511E 00	0.1360E 01	0.2400E 00	0.1405E 01
624.2	0.2487E 00	0.1370E 01	0.2457E 00	0.1382E 01
627.3	0.3021E 00	0.1178E 01	0.2441E 00	0.1388E 01
630.0				
645.0				
645.9	0.3156E 00	0.1135E 01	0.2977E 00	0.1192E 01
665.0				
675.0				
700.0				

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Wave-length (nm)	DISTILLED WATER		MONTEREY OUTFALL STA M-1(S)		MONTEREY OUTFALL STA M-2(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0						
400.0						
410.0						
422.2	0.1088E 01	-.8322E-01	0.2071E-01	0.3816E 01	0.1178E 00	0.2105E 01
432.0	0.1281E 01	-.2434E 00	0.2239E-01	0.3740E 01	0.1369E 00	0.1957E 01
435.5	0.1327E 01	-.2785E 00	0.2324E-01	0.3703E 01	0.1562E 00	0.1827E 01
438.6	0.1164E 01	-.1496E 00	0.2062E-01	0.3820E 01	0.1375E 00	0.1953E 01
444.4	0.1159E 01	-.1456E 00	0.2217E-01	0.3749E 01	0.1544E 00	0.1839E 01
450.1	0.1217E 01	-.1937E 00	0.2322E-01	0.3703E 01	0.1576E 00	0.1818E 01
455.9	0.1245E 01	-.2157E 00	0.2534E-01	0.3618E 01	0.1625E 00	0.1788E 01
461.2	0.1436E 01	-.3563E 00	0.3045E-01	0.3437E 01	0.1919E 00	0.1625E 01
462.0	0.1162E 01	-.1476E 00	0.2528E-01	0.3620E 01	0.1649E 00	0.1774E 01
468.7	0.1159E 01	-.1456E 00	0.2830E-01	0.3509E 01	0.1738E 00	0.1722E 01
477.7	0.1159E 01	-.1452E 00	0.3094E-01	0.3421E 01	0.1842E 00	0.1665E 01
480.0						
489.4	0.1165E 01	-.1499E 00	0.3232E-01	0.3378E 01	0.1898E 00	0.1636E 01
495.2	0.1174E 01	-.1576E 00	0.3331E-01	0.3348E 01	0.1883E 00	0.1643E 01
510.0						
515.1	0.1110E 01	-.1028E 00	0.2844E-01	0.3504E 01	0.2040E 00	0.1565E 01
529.8	0.1117E 01	-.1087E 00	0.3770E-01	0.3226E 01	0.2305E 00	0.1445E 01
541.4	0.1124E 01	-.1154E 00	0.4246E-01	0.3109E 01	0.2458E 00	0.1381E 01
544.3	0.1094E 01	-.8801E-01	0.4132E-01	0.3136E 01	0.2465E 00	0.1378E 01
551.8	0.1115E 01	-.1072E 00	0.4321E-01	0.3092E 01	0.2579E 00	0.1334E 01
561.9	0.1138E 01	-.1270E 00	0.4481E-01	0.3056E 01	0.2735E 00	0.1276E 01
564.1	0.1128E 01	-.1185E 00	0.4547E-01	0.3042E 01	0.2769E 00	0.1264E 01
572.5	0.1164E 01	-.1493E 00	0.4805E-01	0.2988E 01	0.2898E 00	0.1219E 01
577.3	0.1181E 01	-.1636E 00	0.4920E-01	0.2964E 01	0.2921E 00	0.1211E 01
584.8	0.1181E 01	-.1634E 00	0.5041E-01	0.2940E 01	0.2951E 00	0.1201E 01
588.7	0.1174E 01	-.1575E 00	0.5015E-01	0.2946E 01	0.2992E 00	0.1188E 01
599.6	0.7835E 00	0.2402E 00	0.3898E-01	0.3193E 01	0.1940E 00	0.1614E 01
600.8	0.1004E 01	-.3573E-02	0.4762E-01	0.2997E 01	0.2547E 00	0.1346E 01
610.9	0.1029E 01	-.2794E-01	0.4866E-01	0.2975E 01	0.2050E 00	0.1560E 01
624.2	0.9037E 00	0.9970E-01	0.5194E-01	0.2911E 01	0.2602E 00	0.1325E 01
627.3	0.1091E 01	-.8565E-01	0.4757E-01	0.2998E 01	0.2462E 00	0.1380E 01
630.0						
645.0						
645.9	0.1091E 01	-.8559E-01	0.5767E-01	0.2808E 01	0.2475E 00	0.1374E 01
665.0						
675.0						
700.0						

Wave-length (nm)	MONTEREY OUTFALL STA M-2(B) TRANSMISSION	MONTEREY OUTFALL STA M-2(B) ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-3(S) TRANSMISSION	MONTEREY OUTFALL STA M-3(S) ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-3(B) TRANSMISSION	MONTEREY OUTFALL STA M-3(B) ATT. COEF. (1/m)
375.0						
400.0						
410.0						
422.2	0.2429E 00	0.1393E 01	0.1178E 00	0.2105E 01	0.5520E 00	0.5848E 00
432.0	0.3055E 00	0.1167E 01	0.1541E 00	0.1841E 01	0.6531E 00	0.4193E 00
435.5	0.3305E 00	0.1090E 01	0.1639E 00	0.1780E 01	0.6919E 00	0.3625E 00
438.6	0.3061E 00	0.1165E 01	0.1418E 00	0.1923E 01	0.6282E 00	0.4575E 00
444.4	0.2971E 00	0.1194E 01	0.1393E 00	0.1940E 01	0.6302E 00	0.4544E 00
450.1	0.3406E 00	0.1060E 01	0.1506E 00	0.1863E 01	0.6643E 00	0.4026E 00
455.9	0.3480E 00	0.1039E 01	0.1740E 00	0.1721E 01	0.6910E 00	0.3639E 00
461.2	0.4037E 00	0.8927E 00	0.2184E 00	0.1497E 01	0.8194E 00	0.1961E 00
462.0	0.3352E 00	0.1076E 01	0.1825E 00	0.1674E 01	0.7002E 00	0.3508E 00
468.7	0.3161E 00	0.1134E 01	0.2011E 00	0.1578E 01	0.7184E 00	0.3256E 00
477.7	0.3204E 00	0.1120E 01	0.1928E 00	0.1620E 01	0.7342E 00	0.3041E 00
480.0						
489.4	0.3258E 00	0.1104E 01	0.2078E 00	0.1547E 01	0.7221E 00	0.3205E 00
495.2	0.3437E 00	0.1051E 01	0.2001E 00	0.1584E 01	0.7356E 00	0.3022E 00
510.0						
515.1	0.3916E 00	0.9227E 00	0.2121E 00	0.1526E 01	0.7308E 00	0.3087E 00
529.8	0.3898E 00	0.9272E 00	0.2049E 00	0.1560E 01	0.7128E 00	0.3333E 00
541.4	0.4218E 00	0.8496E 00	0.2165E 00	0.1506E 01	0.7361E 00	0.3016E 00
544.3	0.4159E 00	0.8634E 00	0.2300E 00	0.1447E 01	0.7231E 00	0.3192E 00
551.8	0.4307E 00	0.8290E 00	0.2409E 00	0.1401E 01	0.7396E 00	0.2969E 00
561.9	0.4423E 00	0.8029E 00	0.2444E 00	0.1387E 01	0.7566E 00	0.2746E 00
564.1	0.4168E 00	0.8614E 00	0.2463E 00	0.1379E 01	0.7578E 00	0.2730E 00
572.5	0.4099E 00	0.8777E 00	0.2478E 00	0.1373E 01	0.7658E 00	0.2626E 00
577.3	0.3967E 00	0.9100E 00	0.2445E 00	0.1386E 01	0.7611E 00	0.2687E 00
584.8	0.3622E 00	0.9997E 00	0.2441E 00	0.1388E 01	0.7578E 00	0.2730E 00
588.7	0.3444E 00	0.1049E 01	0.2474E 00	0.1375E 01	0.7590E 00	0.2715E 00
599.6	0.2298E 00	0.1448E 01	0.1742E 00	0.1720E 01	0.5509E 00	0.5869E 00
600.8	0.2842E 00	0.1238E 01	0.2330E 00	0.1434E 01	0.6977E 00	0.3543E 00
610.9	0.2374E 00	0.1415E 01	0.1565E 00	0.1826E 01	0.5222E 00	0.6394E 00
624.2	0.2821E 00	0.1245E 01	0.1695E 00	0.1747E 01	0.5111E 00	0.6605E 00
627.3	0.2717E 00	0.1283E 01	0.1963E 00	0.1603E 01	0.5367E 00	0.6125E 00
630.0						
645.0						
645.9	0.2939E 00	0.1205E 01	0.2088E 00	0.1542E 01	0.5524E 00	0.5841E 00
665.0						
675.0						
700.0						

Wave-length (nm)	MONTEREY OUTFALL STA M-4(S)		MONTEREY OUTFALL STA M-4(B)		MONTEREY OUTFALL STA M-5(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0						
400.0						
410.0						
422.2	0.2029E 00	0.1570E 01	0.6067E 00	0.4919E 00	0.2471E 00	0.1376E 01
432.0	0.2686E 00	0.1294E 01	0.7032E 00	0.3466E 00	0.2923E 00	0.1211E 01
435.5	0.2905E 00	0.1217E 01	0.7642E 00	0.2647E 00	0.3085E 00	0.1157E 01
438.6	0.2545E 00	0.1347E 01	0.6927E 00	0.3614E 00	0.2846E 00	0.1237E 01
444.4	0.2635E 00	0.1313E 01	0.7033E 00	0.3464E 00	0.2751E 00	0.1270E 01
450.1	0.2646E 00	0.1309E 01	0.7389E 00	0.2978E 00	0.3125E 00	0.1145E 01
455.9	0.2815E 00	0.1248E 01	0.7703E 00	0.2569E 00	0.3199E 00	0.1122E 01
461.2	0.3376E 00	0.1069E 01	0.8975E 00	0.1064E 00	0.3826E 00	0.9457E 00
462.0	0.2748E 00	0.1271E 01	0.7452E 00	0.2894E 00	0.3265E 00	0.1102E 01
468.7	0.2658E 00	0.1304E 01	0.6896E 00	0.3657E 00	0.3434E 00	0.1052E 01
477.7	0.2738E 00	0.1275E 01	0.6446E 00	0.4323E 00	0.3364E 00	0.1072E 01
480.0						
489.4	0.2911E 00	0.1215E 01	0.3886E 00	0.9303E 00	0.3540E 00	0.1022E 01
495.2	0.2990E 00	0.1188E 01	0.3990E 00	0.9043E 00	0.3613E 00	0.1002E 01
510.0						
515.1	0.2984E 00	0.1190E 01	0.4068E 00	0.8853E 00	0.3625E 00	0.9988E 00
529.8	0.3301E 00	0.1091E 01	0.4553E 00	0.7745E 00	0.3770E 00	0.9601E 00
541.4	0.3101E 00	0.1152E 01	0.5000E 00	0.6822E 00	0.3883E 00	0.9311E 00
544.3	0.3099E 00	0.1153E 01	0.4958E 00	0.6905E 00	0.3787E 00	0.9556E 00
551.8	0.3259E 00	0.1104E 01	0.5157E 00	0.6517E 00	0.3854E 00	0.9385E 00
561.9	0.3463E 00	0.1044E 01	0.5471E 00	0.5937E 00	0.3885E 00	0.9307E 00
564.1	0.3439E 00	0.1051E 01	0.5348E 00	0.6160E 00	0.3964E 00	0.9108E 00
572.5	0.3664E 00	0.9882E 00	0.5131E 00	0.6473E 00	0.4129E 00	0.8705E 00
577.3	0.3736E 00	0.9690E 00	0.5382E 00	0.6098E 00	0.4244E 00	0.8436E 00
584.8	0.3877E 00	0.9327E 00	0.5488E 00	0.5906E 00	0.4180E 00	0.8586E 00
588.7	0.3845E 00	0.9408E 00	0.5584E 00	0.5736E 00	0.4196E 00	0.8548E 00
599.6	0.2825E 00	0.1244E 01	0.4049E 00	0.8898E 00	0.2853E 00	0.1234E 01
600.8	0.3520E 00	0.1028E 01	0.5185E 00	0.6465E 00	0.3661E 00	0.9890E 00
610.9	0.2795E 00	0.1255E 01	0.4532E 00	0.7790E 00	0.2492E 00	0.1367E 01
624.2	0.3408E 00	0.1060E 01	0.4809E 00	0.7205E 00	0.3435E 00	0.1052E 01
627.3	0.3238E 00	0.1110E 01	0.4691E 00	0.7451E 00	0.3482E 00	0.1038E 01
630.0						
645.0						
645.9	0.3337E 00	0.1080E 01	0.5326E 00	0.6201E 00	0.3878E 00	0.9323E 00
665.0						
675.0						
700.0						

Wave-length (nm)	MONTEREY OUTFALL STA M-5(B) TRANSMISSION	ATT. COEF. (1/m)
375.0		
400.0		
410.0		
422.2	0.4143E 00	0.8674E 00
432.0	0.5149E 00	0.6534E 00
435.5	0.5461E 00	0.5955E 00
438.6	0.4425E 00	0.8026E 00
444.4	0.4782E 00	0.7261E 00
450.1	0.5222E 00	0.6395E 00
455.9	0.5502E 00	0.5880E 00
461.2	0.6023E 00	0.4990E 00
462.0	0.4858E 00	0.7105E 00
468.7	0.4813E 00	0.7197E 00
477.7	0.4641E 00	0.7556E 00
480.0		
489.4	0.4797E 00	0.7231E 00
495.2	0.4790E 00	0.7244E 00
510.0		
515.1	0.5490E 00	0.5903E 00
529.8	0.4666E 00	0.7502E 00
541.4	0.5056E 00	0.6712E 00
544.3	0.5096E 00	0.6636E 00
551.8	0.5341E 00	0.6172E 00
561.9	0.5601E 00	0.5704E 00
564.1	0.5596E 00	0.5714E 00
572.5	0.5781E 00	0.5393E 00
577.3	0.5904E 00	0.5186E 00
584.8	0.5903E 00	0.5188E 00
588.7	0.5818E 00	0.5332E 00
599.6	0.4134E 00	0.8695E 00
600.8	0.5505E 00	0.5876E 00
610.9	0.4391E 00	0.8100E 00
624.2	0.4846E 00	0.7131E 00
627.3	0.5223E 00	0.6393E 00
630.0		
645.0		
645.9	0.5767E 00	0.5417E 00
665.0		
675.0		
700.0		

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Wave-length (nm)	DISTILLED WATER		DISTILLED WATER CHECK		MONTEREY OUTFALL STA M-1(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0						
400.0						
410.0						
422.2	0.1364E 01	-.3052E 00	0.1229E 01	-.2031E 00	0.5322E-02	0.5153E 01
432.0	0.1360E 01	-.3024E 00	0.1258E 01	-.2262E 00	0.6345E-02	0.4980E 01
435.5	0.1391E 01	-.3247E 00	0.1280E 01	-.2432E 00	0.6452E-02	0.4964E 01
438.6	0.1383E 01	-.3194E 00	0.1286E 01	-.2473E 00	0.6468E-02	0.4962E 01
444.4	0.1329E 01	-.2798E 00	0.1266E 01	-.2318E 00	0.6629E-02	0.4937E 01
450.1	0.1469E 01	-.3788E 00	0.1312E 01	-.2671E 00	0.7459E-02	0.4821E 01
455.9	0.1398E 01	-.3295E 00	0.1246E 01	-.2164E 00	0.7765E-02	0.4782E 01
461.2	0.1120E 01	-.1111E 00	0.1388E 01	-.3227E 00	0.9535E-02	0.4579E 01
462.0	0.1026E 01	-.2563E-01	0.1273E 01	-.2378E 00	0.8339E-02	0.4711E 01
468.7	0.1037E 01	-.3608E-01	0.1270E 01	-.2353E 00	0.9195E-02	0.4615E 01
477.7	0.1031E 01	-.3035E-01	0.1256E 01	-.2243E 00	0.9208E-02	0.4614E 01
480.0						
489.4	0.1474E 00	0.1885E 01	0.1678E 00	0.1757E 01	0.1386E-02	0.6477E 01
495.2	0.2866E 00	0.1230E 01	0.3370E 00	0.1071E 01	0.2520E-02	0.5889E 01
510.0						
515.1	0.1248E 01	-.2183E 00	0.1265E 01	-.2311E 00	0.1166E-02	0.6648E 01
529.8	0.1265E 01	-.2312E 00	0.1289E 01	-.2498E 00	0.1266E-01	0.4300E 01
541.4	0.1286E 01	-.2477E 00	0.1310E 01	-.2659E 00	0.1369E-01	0.4224E 01
544.3	0.1267E 01	-.2328E 00	0.1304E 01	-.2614E 00	0.1350E-01	0.4237E 01
551.8	0.1283E 01	-.2456E 00	0.1336E 01	-.2852E 00	0.1474E-01	0.4151E 01
561.9	0.1277E 01	-.2410E 00	0.1339E 01	-.2870E 00	0.1586E-01	0.4079E 01
564.1	0.1272E 01	-.2369E 00	0.1329E 01	-.2799E 00	0.1632E-01	0.4050E 01
572.5	0.1273E 01	-.2379E 00	0.1329E 01	-.2799E 00	0.1742E-01	0.3986E 01
577.3	0.1285E 01	-.2471E 00	0.1339E 01	-.2875E 00	0.1799E-01	0.3955E 01
584.8	0.1260E 01	-.2277E 00	0.1316E 01	-.2704E 00	0.1851E-01	0.3927E 01
588.7	0.1267E 01	-.2330E 00	0.1301E 01	-.2587E 00	0.2173E-02	0.6035E 01
599.6	0.1109E 01	-.1020E 00	0.1059E 01	-.5664E-01	0.1779E-01	0.3966E 01
600.8	0.1079E 01	-.7517E-01	0.1048E 01	-.4619E-01	0.1670E-01	0.4028E 01
610.9	0.1071E 01	-.6709E-01	0.1037E 01	-.3585E-01	0.2308E-01	0.3709E 01
624.2	0.1153E 01	-.1402E 00	0.9631E 00	0.3704E-01	0.1694E-01	0.4014E 01
627.3	0.1087E 01	-.8194E-01	0.8897E 00	0.1151E 00	0.1592E-01	0.4075E 01
630.0						
645.0						
645.9	0.1077E 01	-.7325E-01	0.9182E 00	0.8404E-01	0.2132E-01	0.3787E 01
665.0						
675.0						
700.0						

Wave- length (nm)	MONTEREY OUTFALL STA M-2(S)		MONTEREY OUTFALL STA M-2(B)		MONTEREY OUTFALL STA M-3(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0						
400.0						
410.0						
422.2	0.9973E-01	0.2269E 01	0.3966E 00	0.9102E 00	0.1952E-01	0.3875E 01
432.0	0.1006E 00	0.2260E 01	0.4366E 00	0.8157E 00	0.1828E-01	0.3939E 01
435.5	0.1088E 00	0.2183E 01	0.4445E 00	0.7981E 00	0.1979E-01	0.3861E 01
438.6	0.1043E 00	0.2225E 01	0.4290E 00	0.8330E 00	0.1967E-01	0.3867E 01
444.4	0.1076E 00	0.2195E 01	0.4399E 00	0.8082E 00	0.2019E-01	0.3841E 01
450.1	0.1161E 00	0.2119E 01	0.4687E 00	0.7459E 00	0.2210E-01	0.3752E 01
455.9	0.1080E 00	0.2191E 01	0.4553E 00	0.7744E 00	0.2453E-01	0.3649E 01
461.2	0.1194E 00	0.2092E 01	0.5333E 00	0.6188E 00	0.2737E-01	0.3542E 01
462.0	0.1137E 00	0.2140E 01	0.4875E 00	0.7071E 00	0.2550E-01	0.3611E 01
468.7	0.1162E 00	0.2118E 01	0.5014E 00	0.6794E 00	0.2644E-01	0.3576E 01
477.7	0.1188E 00	0.2096E 01	0.5095E 00	0.6637E 00	0.2750E-01	0.3537E 01
480.0						
489.4	0.1736E-01	0.3989E 01	0.7413E-01	0.2561E 01	0.4115E-02	0.5407E 01
495.2	0.3311E-01	0.3354E 01	0.1324E 00	0.1990E 01	0.7150E-02	0.4863E 01
510.0						
515.1	0.1340E 00	0.1978E 01	0.5327E 00	0.6200E 00	0.2821E-01	0.3512E 01
529.8	0.1435E 00	0.1911E 01	0.5420E 00	0.6028E 00	0.3215E-01	0.3383E 01
541.4	0.1564E 00	0.1826E 01	0.5950E 00	0.5110E 00	0.3199E-01	0.3388E 01
544.3	0.1598E 00	0.1805E 01	0.5812E 00	0.5341E 00	0.3292E-01	0.3360E 01
551.8	0.1587E 00	0.1812E 01	0.5908E 00	0.5180E 00	0.3443E-01	0.3316E 01
561.9	0.1615E 00	0.1795E 01	0.5994E 00	0.5037E 00	0.3463E-01	0.3310E 01
564.1	0.1618E 00	0.1793E 01	0.6004E 00	0.5022E 00	0.3468E-01	0.3309E 01
572.5	0.1637E 00	0.1781E 01	0.6067E 00	0.4919E 00	0.3724E-01	0.3239E 01
577.3	0.1661E 00	0.1767E 01	0.6212E 00	0.4686E 00	0.3721E-01	0.3239E 01
584.8	0.1675E 00	0.1759E 01	0.6158E 00	0.4772E 00	0.3606E-01	0.3270E 01
588.7	0.1672E 00	0.1761E 01	0.6102E 00	0.4862E 00	0.3343E-01	0.3345E 01
599.6	0.1313E 00	0.1998E 01	0.5336E 00	0.6182E 00	0.2598E-01	0.3593E 01
600.8	0.1353E 00	0.1969E 01	0.5303E 00	0.6243E 00	0.2672E-01	0.3565E 01
610.9	0.1288E 00	0.2017E 01	0.5252E 00	0.6338E 00	0.2375E-01	0.3681E 01
624.2	0.1140E 00	0.2137E 01	0.4973E 00	0.6876E 00	0.2052E-01	0.3825E 01
627.3	0.1067E 00	0.2203E 01	0.4625E 00	0.7589E 00	0.1883E-01	0.3910E 01
630.0						
645.0						
645.9	0.1190E 00	0.2095E 01	0.4994E 00	0.6834E 00	0.2210E-02	0.6019E 01
665.0						
675.0						
700.0						

Wave-length (nm)	MONTEREY OUTFALL STA M-4(S) TRANSMISSION	ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-4(B) TRANSMISSION	ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-5(S) TRANSMISSION	ATT. COEF. (1/m)
375.0						
400.0						
410.0						
422.2	0.4245E-01	0.3110E 01	0.1222E 00	0.2069E 01	0.2408E 00	0.1401E 01
432.0	0.4456E-01	0.3062E 01	0.1266E 00	0.2034E 01	0.2478E 00	0.1373E 01
435.5	0.4789E-01	0.2991E 01	0.1352E 00	0.1969E 01	0.2394E 00	0.1407E 01
438.6	0.4818E-01	0.2985E 01	0.1294E 00	0.2013E 01	0.2508E 00	0.1361E 01
444.4	0.5077E-01	0.2933E 01	0.1302E 00	0.2007E 01	0.2486E 00	0.1370E 01
450.1	0.5348E-01	0.2882E 01	0.1413E 00	0.1926E 01	0.2716E 00	0.1283E 01
455.9	0.5682E-01	0.2823E 01	0.1362E 00	0.1962E 01	0.2612E 00	0.1321E 01
461.2	0.6534E-01	0.2685E 01	0.1533E 00	0.1846E 01	0.3073E 00	0.1161E 01
462.0	0.5886E-01	0.2788E 01	0.1392E 00	0.1941E 01	0.2726E 00	0.1279E 01
468.7	0.6207E-01	0.2736E 01	0.1488E 00	0.1875E 01	0.2888E 00	0.1223E 01
477.7	0.6323E-01	0.2718E 01	0.1694E-01	0.4014E 01	0.2898E 00	0.1219E 01
480.0						
489.4	0.9514E-02	0.4582E 01	0.2218E-02	0.6015E 01	0.4144E-01	0.3133E 01
495.2	0.1746E-01	0.3984E 01	0.4161E-02	0.5396E 01	0.7677E-01	0.2526E 01
510.0						
515.1	0.7215E-01	0.2588E 01	0.1923E-01	0.3889E 01	0.3240E 00	0.1109E 01
529.8	0.7939E-01	0.2494E 01	0.1963E-01	0.3869E 01	0.3414E 00	0.1058E 01
541.4	0.8855E-01	0.2386E 01	0.1983E 00	0.1592E 01	0.3548E 00	0.1020E 01
544.3	0.8663E-01	0.2408E 01	0.1997E 00	0.1586E 01	0.3581E 00	0.1011E 01
551.8	0.8884E-01	0.2383E 01	0.2040E 00	0.1564E 01	0.3641E 00	0.9943E 00
561.9	0.9413E-01	0.2326E 01	0.2095E 00	0.1538E 01	0.3710E 00	0.9759E 00
564.1	0.9472E-01	0.2320E 01	0.2084E 00	0.1544E 01	0.3731E 00	0.9705E 00
572.5	0.9851E-01	0.2281E 01	0.2132E 00	0.1521E 01	0.3784E 00	0.9565E 00
577.3	0.1036E 00	0.2231E 01	0.2122E 00	0.1526E 01	0.3829E 00	0.9450E 00
584.8	0.1027E 00	0.2240E 01	0.2058E 00	0.1556E 01	0.3861E 00	0.9367E 00
588.7	0.1062E 00	0.2208E 01	0.2073E 00	0.1549E 01	0.3895E 00	0.9280E 00
599.6	0.9393E-01	0.2328E 01	0.1735E 00	0.1724E 01	0.3438E 00	0.1051E 01
600.8	0.9520E-01	0.2315E 01	0.1641E 00	0.1779E 01	0.3340E 00	0.1079E 01
610.9	0.9568E-01	0.2310E 01	0.1656E 00	0.1770E 01	0.3345E 00	0.1078E 01
624.2	0.8860E-01	0.2385E 01	0.1531E 00	0.1847E 01	0.3170E 00	0.1131E 01
627.3	0.8379E-01	0.2440E 01	0.1516E 00	0.1856E 01	0.3008E 00	0.1182E 01
630.0						
645.0						
645.9	0.9690E-01	0.2297E 01	0.1690E 00	0.1750E 01	0.3491E 00	0.1036E 01
665.0						
675.0						
700.0						

Wave- length (nm)	MONTEREY OUTFALL STA M-5(B) TRANSMISSION	ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-6(S) TRANSMISSION	ATT. COEF. (1/m)
375.0				
400.0				
410.0				
422.2	0.3966E 00	0.9102E 00	0.3383E 00	0.1067E 01
432.0	0.4109E 00	0.8754E 00	0.3429E 00	0.1053E 01
435.5	0.4473E 00	0.7918E 00	0.3484E 00	0.1038E 01
438.6	0.4211E 00	0.8514E 00	0.3524E 00	0.1026E 01
444.4	0.4459E 00	0.7949E 00	0.3435E 00	0.1052E 01
450.1	0.4011E 00	0.8991E 00	0.3730E 00	0.9707E 00
455.9	0.35[illegible]E 00	0.1025E 01	0.3776E 00	0.9585E 00
461.2	0.5386E 00	0.6091E 00	0.4309E 00	0.8287E 00
462.0	0.5052E 00	0.6721E 00	0.4041E 00	0.8917E 00
468.7	0.5100E 00	0.6626E 00	0.4123E 00	0.8719E 00
477.7	0.4985E 00	0.6852E 00	0.4297E 00	0.8313E 00
480.0				
489.4	0.7369E-01	0.2567E 01	0.6318E-01	0.2718E 01
495.2	0.1286E 00	0.2018E 01	0.1149E 00	0.2130E 01
510.0				
515.1	0.5257E 00	0.6330E 00	0.4347E 00	0.8199E 00
529.8	0.5378E 00	0.6105E 00	0.4467E 00	0.7931E 00
541.4	0.5699E 00	0.5535E 00	0.4889E 00	0.7044E 00
544.3	0.5647E 00	0.5625E 00	0.4724E 00	0.7381E 00
551.8	0.5795E 00	0.5370E 00	0.4860E 00	0.7102E 00
561.9	0.5732E 00	0.5477E 00	0.5078E 00	0.6671E 00
564.1	0.5887E 00	0.5215E 00	0.5231E 00	0.6377E 00
572.5	0.5811E 00	0.5342E 00	0.5211E 00	0.6416E 00
577.3	0.5874E 00	0.5237E 00	0.5335E 00	0.6183E 00
584.8	0.5743E 00	0.5458E 00	0.5345E 00	0.6166E 00
588.7	0.5667E 00	0.5590E 00	0.5232E 00	0.6375E 00
599.6	0.4936E 00	0.6948E 00	0.4577E 00	0.7693E 00
600.8	0.4739E 00	0.7350E 00	0.4635E 00	0.7569E 00
610.9	0.4884E 00	0.7053E 00	0.4717E 00	0.7396E 00
624.2	0.4278E 00	0.8358E 00	0.4669E 00	0.7497E 00
627.3	0.4019E 00	0.8973E 00	0.4385E 00	0.8114E 00
630.0				
645.0				
645.9	0.4442E 00	0.7988E 00	0.4574E 00	0.7698E 00
665.0				
675.0				
700.0				

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Wave-length (nm)	DISTILLED WATER		MONTEREY OUTFALL STA M-1		MONTEREY OUTFALL STA M-2(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.8559E 00	0.1532E 00	0.3055E-01	0.3433E 01	0.4845E-01	0.2980E 01
400.0	0.9546E 00	0.4571E-01	0.4155E-01	0.3131E 01	0.6336E-01	0.2715E 01
410.0	0.9487E 00	0.5183E-01	0.4031E-01	0.3161E 01	0.6722E-01	0.2657E 01
422.2	0.9556E 00	0.4466E-01	0.4437E-01	0.3066E 01	0.7034E-01	0.2613E 01
432.0	0.1086E 01	-.8152E-01	0.5162E-01	0.2917E 01	0.8454E-01	0.2432E 01
435.5	0.1153E 01	-.1400E 00	0.5745E-01	0.2812E 01	0.9243E-01	0.2344E 01
438.6	0.1037E 01	-.3605E-01	0.5327E-01	0.2886E 01	0.8452E-01	0.2432E 01
444.4	0.1102E 01	-.9540E-01	0.5999E-01	0.2769E 01	0.8402E-01	0.2438E 01
450.1	0.1071E 01	-.6757E-01	0.5855E-01	0.2793E 01	0.8487E-01	0.2428E 01
455.9	0.1093E 01	-.8729E-01	0.6078E-01	0.2756E 01	0.9430E-01	0.2324E 01
461.2	0.1254E 01	-.2229E 00	0.7400E-01	0.2563E 01	0.1121E 00	0.2154E 01
462.0	0.1059E 01	-.5616E-01	0.6375E-01	0.2709E 01	0.8925E-01	0.2378E 01
468.7	0.1092E 01	-.8656E-01	0.6753E-01	0.2653E 01	0.9641E-01	0.2302E 01
477.7	0.1080E 01	-.7541E-01	0.7029E-01	0.2613E 01	0.1027E 00	0.2240E 01
480.0	0.1100E 01	-.9380E-01	0.7136E-01	0.2598E 01	0.1008E 00	0.2258E 01
489.4	0.1138E 01	-.1276E 00	0.7411E-01	0.2561E 01	0.9822E-01	0.2284E 01
495.2	0.1055E 01	-.5229E-01	0.6968E-01	0.2622E 01	0.1354E 00	0.1968E 01
510.0	0.1056E 01	-.5345E-01	0.7610E-01	0.2535E 01	0.7483E-01	0.2552E 01
515.1	0.1082E 01	-.7786E-01	0.8229E-01	0.2458E 01	0.9592E-01	0.2307E 01
529.8	0.1081E 01	-.7688E-01	0.8906E-01	0.2380E 01	0.1144E 00	0.2134E 01
541.4	0.1099E 01	-.9314E-01	0.9777E-01	0.2288E 01	0.1235E 00	0.2059E 01
544.3	0.1084E 01	-.7929E-01	0.9641E-01	0.2302E 01	0.1244E 00	0.2052E 01
551.8	0.1105E 01	-.9839E-01	0.1023E 00	0.2244E 01	0.1279E 00	0.2024E 01
561.9	0.1119E 01	-.1105E 00	0.1029E 00	0.2239E 01	0.1324E 00	0.1990E 01
564.1	0.1107E 01	-.1005E 00	0.1030E 00	0.2237E 01	0.1326E 00	0.1989E 01
572.5	0.1107E 01	-.9979E-01	0.1050E 00	0.2219E 01	0.1385E 00	0.1946E 01
577.3	0.1109E 01	-.1015E 00	0.1099E 00	0.2173E 01	0.1435E 00	0.1911E 01
584.8	0.1094E 01	-.8881E-01	0.1055E 00	0.2214E 01	0.1429E 00	0.1915E 01
588.7	0.1108E 01	-.1012E 00	0.1110E 00	0.2164E 01	0.1525E 00	0.1851E 01
599.6	0.7072E 00	0.3410E 00	0.7411E-01	0.2561E 01	0.1102E 00	0.2171E 01
600.8	0.9127E 00	0.8986E-01	0.9704E-01	0.2296E 01	0.1421E 00	0.1921E 01
610.9	0.6335E 00	0.4492E 00	0.7370E-01	0.2567E 01	0.1135E 00	0.2141E 01
624.2	0.7883E 00	0.2342E 00	0.9012E-01	0.2369E 01	0.1487E 00	0.1875E 01
627.3	0.7772E 00	0.2481E 00	0.8694E-01	0.2404E 01	0.1403E 00	0.1933E 01
630.0	0.7349E 00	0.3032E 00	0.8022E-01	0.2483E 01	0.1394E 00	0.1939E 01
645.0	0.8499E 00	0.1601E 00	0.1048E 00	0.2220E 01	0.1817E 00	0.1679E 01
645.9	0.8253E 00	0.1889E 00	0.1050E 00	0.2219E 01	0.1779E 00	0.1699E 01
665.0	0.8003E 00	0.2193E 00	0.1159E 00	0.2121E 01	0.1841E 00	0.1666E 01
675.0	0.7933E 00	0.2279E 00	0.1191E 00	0.2094E 01	0.1846E 00	0.1663E 01
700.0	0.1100E 01	-.9366E-01	0.1053E 00	0.2216E 01	0.1647E 00	0.1775E 01

Wave-length (nm)	MONTEREY OUTFALL STA M-2(B)		MONTEREY OUTFALL STA M-3(S)		MONTEREY OUTFALL STA M-3(B)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.2802E 00	0.1252E 01	0.8440E-02	0.4700E 01	0.5824E 00	0.5321E 00
400.0	0.3152E 00	0.1136E 01	0.1096E-01	0.4442E 01	0.6201E 00	0.4704E 00
410.0	0.3209E 00	0.1119E 01	0.1067E-01	0.4469E 01	0.6448E 00	0.4319E 00
422.2	0.3259E 00	0.1103E 01	0.1146E-01	0.4398E 01	0.6645E 00	0.4023E 00
432.0	0.3845E 00	0.9407E 00	0.1435E-01	0.4177E 01	0.7216E 00	0.3211E 00
435.5	0.4118E 00	0.8732E 00	0.1614E-01	0.4062E 01	0.7707E 00	0.2564E 00
438.6	0.3243E 00	0.1108E 01	0.1418E-01	0.4189E 01	0.6766E 00	0.3846E 00
444.4	0.4161E 00	0.8631E 00	0.1474E-01	0.4150E 01	0.6908E 00	0.3641E 00
450.1	0.4011E 00	0.8991E 00	0.1478E-01	0.4148E 01	0.6981E 00	0.3537E 00
455.9	0.4133E 00	0.8697E 00	0.1715E-01	0.4002E 01	0.7473E 00	0.2868E 00
461.2	0.4885E 00	0.7052E 00	0.2012E-01	0.3844E 01	0.8803E 00	0.1255E 00
462.0	0.4166E 00	0.8619E 00	0.1704E-01	0.4008E 01	0.7287E 00	0.3114E 00
468.7	0.4440E 00	0.7992E 00	0.1853E-01	0.3925E 01	0.7715E 00	0.2553E 00
477.7	0.4309E 00	0.8287E 00	0.2019E-01	0.3841E 01	0.7805E 00	0.2439E 00
480.0	0.4364E 00	0.8161E 00	0.2052E-01	0.3825E 01	0.7749E 00	0.2510E 00
489.4	0.4602E 00	0.7639E 00	0.2254E-01	0.3733E 01	0.7967E 00	0.2237E 00
495.2	0.4578E 00	0.7689E 00	0.2166E-01	0.3772E 01	0.7462E 00	0.2882E 00
510.0	0.4838E 00	0.7146E 00	0.2400E-01	0.3671E 01	0.7620E 00	0.2675E 00
515.1	0.4802E 00	0.7220E 00	0.2389E-01	0.3675E 01	0.7529E 00	0.2793E 00
529.8	0.4908E 00	0.7005E 00	0.2604E-01	0.3591E 01	0.7213E 00	0.3216E 00
541.4	0.5531E 00	0.5829E 00	0.2933E-01	0.3474E 01	0.7389E 00	0.2978E 00
544.3	0.5440E 00	0.5992E 00	0.2989E-01	0.3455E 01	0.7341E 00	0.3043E 00
551.8	0.5582E 00	0.5738E 00	0.3145E-01	0.3405E 01	0.7467E 00	0.2875E 00
561.9	0.5616E 00	0.5679E 00	0.3346E-01	0.3344E 01	0.7522E 00	0.2803E 00
564.1	0.5625E 00	0.5663E 00	0.3439E-01	0.3317E 01	0.7505E 00	0.2825E 00
572.5	0.5811E 00	0.5342E 00	0.3604E-01	0.3271E 01	0.7568E 00	0.2742E 00
577.3	0.5766E 00	0.5419E 00	0.3644E-01	0.3260E 01	0.7534E 00	0.2787E 00
584.8	0.5823E 00	0.5322E 00	0.3749E-01	0.3232E 01	0.7482E 00	0.2855E 00
588.7	0.5951E 00	0.5108E 00	0.3912E-01	0.3190E 01	0.7590E 00	0.2715E 00
599.6	0.3607E 00	0.1004E 01	0.2778E-01	0.3527E 01	0.5330E 00	0.6194E 00
600.8	0.4698E 00	0.7435E 00	0.3456E-01	0.3312E 01	0.6938E 00	0.3598E 00
610.9	0.3513E 00	0.1030E 01	0.2540E-01	0.3615E 01	0.5050E 00	0.6725E 00
624.2	0.4278E 00	0.8358E 00	0.3301E-01	0.3357E 01	0.5831E 00	0.5310E 00
627.3	0.4107E 00	0.8758E 00	0.2932E-01	0.3474E 01	0.5447E 00	0.5980E 00
630.0	0.4067E 00	0.8855E 00	0.3113E-01	0.3415E 01	0.5484E 00	0.5914E 00
645.0	0.4811E 00	0.7202E 00	0.4228E-01	0.3114E 01	0.6561E 00	0.4147E 00
645.9	0.4574E 00	0.7698E 00	0.4022E-01	0.3163E 01	0.6331E 00	0.4499E 00
665.0	0.4902E 00	0.7016E 00	0.4504E-01	0.3051E 01	0.6469E 00	0.4288E 00
675.0	0.4967E 00	0.6887E 00	0.4324E-01	0.3092E 01	0.6349E 00	0.4471E 00
700.0	0.4118E 00	0.8733E 00	0.4300E-01	0.3097E 01	0.5525E 00	0.5839E 00

Wave-length (nm)	MONTEREY OUTFALL STA M-4(S)		MONTEREY OUTFALL STA M-4(B)		MONTEREY OUTFALL STA M-5(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.5841E-01	0.2796E 01	0.2937E 00	0.1206E 01	0.2870E-02	0.5761E 01
400.0	0.7537E-01	0.2545E 01	0.3403E 00	0.1061E 01	0.4175E-02	0.5392E 01
410.0	0.7710E-01	0.2522E 01	0.3738E 00	0.9686E 00	0.4305E-02	0.5362E 01
422.2	0.7696E-01	0.2524E 01	0.3617E 00	0.1001E 01	0.4626E-02	0.5291E 01
432.0	0.8875E-01	0.2384E 01	0.4043E 00	0.8914E 00	0.5794E-02	0.5070E 01
435.5	0.9708E-01	0.2296E 01	0.4325E 00	0.8251E 00	0.6326E-02	0.4983E 01
438.6	0.8688E-01	0.2405E 01	0.3931E 00	0.9191E 00	0.6014E-02	0.5033E 01
444.4	0.9978E-01	0.2269E 01	0.4322E 00	0.8256E 00	0.6766E-02	0.4917E 01
450.1	0.9557E-01	0.2311E 01	0.4363E 00	0.8163E 00	0.6193E-02	0.5004E 01
455.9	0.1024E 00	0.2243E 01	0.4402E 00	0.8077E 00	0.6526E-02	0.4953E 01
461.2	0.1183E 00	0.2101E 01	0.5242E 00	0.6357E 00	0.9001E-02	0.4636E 01
462.0	0.1041E 00	0.2227E 01	0.4199E 00	0.8541E 00	0.6485E-02	0.4959E 01
468.7	0.1106E 00	0.2167E 01	0.4296E 00	0.8316E 00	0.8189E-02	0.4729E 01
477.7	0.1139E 00	0.2138E 01	0.4383E 00	0.8120E 00	0.8864E-02	0.4651E 01
480.0	0.1131E 00	0.2145E 01	0.4352E 00	0.8188E 00	0.8492E-02	0.4693E 01
489.4	0.1216E 00	0.2074E 01	0.4560E 00	0.7729E 00	0.9224E-02	0.4612E 01
495.2	0.1201E 00	0.2086E 01	0.4590E 00	0.7664E 00	0.8592E-02	0.4682E 01
510.0	0.1234E 00	0.2059E 01	0.4623E 00	0.7594E 00	0.1009E-01	0.4524E 01
515.1	0.1270E 00	0.2031E 01	0.4592E 00	0.7660E 00	0.1037E-01	0.4497E 01
529.8	0.1366E 00	0.1960E 01	0.4809E 00	0.7206E 00	0.1152E-01	0.4393E 01
541.4	0.1455E 00	0.1897E 01	0.4972E 00	0.6877E 00	0.1117E-01	0.4423E 01
544.3	0.1436E 00	0.1910E 01	0.4765E 00	0.7296E 00	0.1157E-01	0.4389E 01
551.8	0.1512E 00	0.1860E 01	0.4874E 00	0.7074E 00	0.1190E-01	0.4361E 01
561.9	0.1513E 00	0.1859E 01	0.5121E 00	0.6586E 00	0.1339E-01	0.4246E 01
564.1	0.1559E 00	0.1829E 01	0.5129E 00	0.6571E 00	0.1341E-01	0.4244E 01
572.5	0.1592E 00	0.1809E 01	0.5256E 00	0.6331E 00	0.1457E-01	0.4162E 01
577.3	0.1605E 00	0.1800E 01	0.5320E 00	0.6212E 00	0.1599E-01	0.4071E 01
584.8	0.1622E 00	0.1790E 01	0.5249E 00	0.6344E 00	0.1659E-01	0.4034E 01
588.7	0.1710E 00	0.1738E 01	0.5216E 00	0.6407E 00	0.1672E-01	0.4027E 01
599.6	0.1130E 00	0.2146E 01	0.3249E 00	0.1107E 01	0.1158E-01	0.4388E 01
600.8	0.1459E 00	0.1894E 01	0.4058E 00	0.8877E 00	0.1472E-01	0.4152E 01
610.9	0.1101E 00	0.2172E 01	0.3183E 00	0.1127E 01	0.8939E-02	0.4643E 01
624.2	0.1422E 00	0.1920E 01	0.3898E 00	0.9273E 00	0.1455E-01	0.4164E 01
627.3	0.1365E 00	0.1960E 01	0.4979E 00	0.6864E 00	0.1340E-01	0.4245E 01
630.0	0.1349E 00	0.1972E 01	0.3787E 00	0.9558E 00	0.1332E-01	0.4250E 01
645.0	0.1563E 00	0.1827E 01	0.4624E 00	0.7592E 00	0.1684E-01	0.4019E 01
645.9	0.1569E 00	0.1823E 01	0.4453E 00	0.7963E 00	0.1646E-01	0.4042E 01
665.0	0.2106E 00	0.1533E 01	0.4566E 00	0.7716E 00	0.2115E-01	0.3795E 01
675.0	0.1703E 00	0.1742E 01	0.4634E 00	0.7571E 00	0.2097E-01	0.3804E 01
700.0	0.1525E 00	0.1851E 01	0.4092E 00	0.8795E 00	0.2189E-01	0.3761E 01

Wave-length (nm)	MONTEREY OUTFALL STA M-5(B)		B-BUOY STA M-7(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.4558E 00	0.7734E 00	0.4170E 00	0.8610E 00
400.0	0.5011E 00	0.6801E 00	0.4896E 00	0.7030E 00
410.0	0.5059E 00	0.6708E 00	0.4922E 00	0.6978E 00
422.2	0.4994E 00	0.6834E 00	0.4952E 00	0.6917E 00
432.0	0.5636E 00	0.5644E 00	0.5768E 00	0.5417E 00
435.5	0.6029E 00	0.4981E 00	0.5938E 00	0.5130E 00
438.6	0.5413E 00	0.6042E 00	0.5327E 00	0.6199E 00
444.4	0.5110E 00	0.6608E 00	0.5756E 00	0.5436E 00
450.1	0.5799E 00	0.5364E 00	0.5264E 00	0.6316E 00
455.9	0.6040E 00	0.4963E 00	0.5451E 00	0.5972E 00
461.2	0.7016E 00	0.3488E 00	0.6367E 00	0.4443E 00
462.0	0.5826E 00	0.5318E 00	0.5463E 00	0.5951E 00
468.7	0.5747E 00	0.5452E 00	0.5488E 00	0.5905E 00
477.7	0.5774E 00	0.5406E 00	0.5490E 00	0.5901E 00
480.0	0.5685E 00	0.5558E 00	0.5508E 00	0.5870E 00
489.4	0.5870E 00	0.5243E 00	0.4549E 00	0.7752E 00
495.2	0.5885E 00	0.5219E 00	0.5732E 00	0.5478E 00
510.0	0.5974E 00	0.5070E 00	0.5906E 00	0.5183E 00
515.1	0.6014E 00	0.5005E 00	0.5758E 00	0.5433E 00
529.8	0.7455E 00	0.2891E 00	0.5748E 00	0.5451E 00
541.4	0.6104E 00	0.4859E 00	0.5811E 00	0.5344E 00
544.3	0.6032E 00	0.4975E 00	0.5812E 00	0.5341E 00
551.8	0.6121E 00	0.4832E 00	0.5937E 00	0.5132E 00
561.9	0.6125E 00	0.4824E 00	0.5922E 00	0.5157E 00
564.1	0.6281E 00	0.4578E 00	0.5829E 00	0.5313E 00
572.5	0.6262E 00	0.4607E 00	0.5811E 00	0.5342E 00
577.3	0.6366E 00	0.4446E 00	0.5874E 00	0.5237E 00
584.8	0.6350E 00	0.4470E 00	0.5743E 00	0.5458E 00
588.7	0.6252E 00	0.4623E 00	0.5684E 00	0.5561E 00
599.6	0.4021E 00	0.8967E 00	0.3833E 00	0.9440E 00
600.8	0.5300E 00	0.6249E 00	0.4788E 00	0.7249E 00
610.9	0.3889E 00	0.9295E 00	0.3701E 00	0.9784E 00
624.2	0.4723E 00	0.7383E 00	0.4549E 00	0.7752E 00
627.3	0.4638E 00	0.7562E 00	0.4284E 00	0.8343E 00
630.0	0.4432E 00	0.8010E 00	0.4263E 00	0.8391E 00
645.0	0.5218E 00	0.6402E 00	0.4943E 00	0.6935E 00
645.9	0.5094E 00	0.6640E 00	0.5933E 00	0.5138E 00
665.0	0.5433E 00	0.6004E 00	0.3646E 00	0.9931E 00
675.0	0.5360E 00	0.6137E 00	0.4169E 00	0.8611E 00
700.0	0.4613E 00	0.7615E 00	0.4222E 00	0.8487E 00

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Wave-length (nm)	SEASIDE OUTFALL STA S-1(S) TRANSMISSION	SEASIDE OUTFALL STA S-1(S) ATT. COEF. (1/m)	SEASIDE OUTFALL STA S-2(S) TRANSMISSION	SEASIDE OUTFALL STA S-2(S) ATT. COEF. (1/m)	SEASIDE OUTFALL STA S-3(S) TRANSMISSION	SEASIDE OUTFALL STA S-3(S) ATT. COEF. (1/m)
375.0	0.1215E-01	0.4341E 01	0.3207E 00	0.1119E 01	0.3022E 00	0.1178E 01
400.0	0.1900E-01	0.3901E 01	0.3800E 00	0.9524E 00	0.3539E 00	0.1022E 01
410.0	0.1898E-01	0.3902E 01	0.4002E 00	0.9014E 00	0.3738E 00	0.9686E 00
422.2	0.2197E-01	0.3758E 01	0.4069E 00	0.8850E 00	0.3869E 00	0.9346E 00
432.0	0.3437E-01	0.3318E 01	0.4793E 00	0.7238E 00	0.4503E 00	0.7852E 00
435.5	0.3744E-01	0.3233E 01	0.5215E 00	0.6407E 00	0.4931E 00	0.6958E 00
438.6	0.3845E-01	0.3207E 01	0.4618E 00	0.7605E 00	0.4382E 00	0.8122E 00
444.4	0.2686E-01	0.3560E 01	0.4443E 00	0.7984E 00	0.4464E 00	0.7939E 00
450.1	0.4645E-01	0.3021E 01	0.4856E 00	0.7111E 00	0.4546E 00	0.7759E 00
455.9	0.4478E-01	0.3057E 01	0.5080E 00	0.6666E 00	0.4939E 00	0.6943E 00
461.2	0.5030E-01	0.2943E 01	0.5877E 00	0.5231E 00	0.5546E 00	0.5801E 00
462.0	0.4177E-01	0.3126E 01	0.5001E 00	0.6820E 00	0.4847E 00	0.7128E 00
468.7	0.4167E-01	0.3128E 01	0.5517E 00	0.5854E 00	0.5072E 00	0.6682E 00
477.7	0.4530E-01	0.3046E 01	0.4604E 00	0.7634E 00	0.5097E 00	0.6634E 00
480.0	0.4647E-01	0.3021E 01	0.5744E 00	0.5457E 00	0.5119E 00	0.6591E 00
489.4	0.5199E-01	0.2910E 01	0.5933E 00	0.5138E 00	0.5430E 00	0.6011E 00
495.2	0.5320E-01	0.2888E 01	0.6156E 00	0.4776E 00	0.5485E 00	0.5912E 00
510.0	0.6229E-01	0.2732E 01	0.6161E 00	0.4768E 00	0.5710E 00	0.5515E 00
515.1	0.6247E-01	0.2729E 01	0.6061E 00	0.4929E 00	0.5303E 00	0.6243E 00
529.8	0.7313E-01	0.2574E 01	0.6132E 00	0.4814E 00	0.5378E 00	0.6105E 00
541.4	0.9233E-01	0.2345E 01	0.6783E 00	0.3813E 00	0.5685E 00	0.5559E 00
544.3	0.9076E-01	0.2362E 01	0.6872E 00	0.3692E 00	0.5771E 00	0.5411E 00
551.8	0.9351E-01	0.2332E 01	0.7113E 00	0.3354E 00	0.5951E 00	0.5109E 00
561.9	0.9806E-01	0.2286E 01	0.7231E 00	0.3191E 00	0.6125E 00	0.4824E 00
564.1	0.1005E 00	0.2261E 01	0.7228E 00	0.3195E 00	0.6077E 00	0.4903E 00
572.5	0.1036E 00	0.2231E 01	0.7448E 00	0.2900E 00	0.6142E 00	0.4798E 00
577.3	0.1076E 00	0.2194E 01	0.7411E 00	0.2949E 00	0.6227E 00	0.4662E 00
584.8	0.1133E 00	0.2144E 01	0.7419E 00	0.2939E 00	0.6142E 00	0.4797E 00
588.7	0.1135E 00	0.2142E 01	0.9261E 00	0.7553E-01	0.6269E 00	0.4596E 00
599.6	0.8729E-01	0.2400E 01	0.5132E 00	0.6566E 00	0.4445E 00	0.7981E 00
600.8	0.1102E 00	0.2171E 01	0.6862E 00	0.3707E 00	0.5684E 00	0.5561E 00
610.9	0.8986E-01	0.2372E 01	0.5065E 00	0.6695E 00	0.4156E 00	0.8643E 00
624.2	0.9772E-01	0.2289E 01	0.5896E 00	0.5200E 00	0.4560E 00	0.7729E 00
627.3	0.9491E-01	0.2318E 01	0.5674E 00	0.5577E 00	0.4802E 00	0.7220E 00
630.0	0.9733E-01	0.2293E 01	0.5582E 00	0.5739E 00	0.4698E 00	0.7435E 00
645.0	0.1233E 00	0.2060E 01	0.6606E 00	0.4082E 00	0.5802E 00	0.5358E 00
645.9	0.1237E 00	0.2057E 01	0.6298E 00	0.4551E 00	0.5524E 00	0.5841E 00
665.0	0.1009E 00	0.2258E 01	0.6345E 00	0.4478E 00	0.5362E 00	0.6133E 00
675.0	0.1310E 00	0.2000E 01	0.6361E 00	0.4453E 00	0.5551E 00	0.5793E 00
700.0	0.1238E 00	0.2056E 01	0.5525E 00	0.5839E 00	0.4822E 00	0.7180E 00

Wave-length (nm)	MONTEREY OUTFALL STA M-1(S) TRANSMISSION	ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-2(S) TRANSMISSION	ATT. COEF. (1/m)	MONTEREY OUTFALL STA M-3(S) TRANSMISSION	ATT. COEF. (1/m)
375.0	0.1519E-02	0.6387E 01	0.2802E 00	0.1252E 01	0.3376E 00	0.1069E 01
400.0	0.1253E-02	0.6577E 01	0.3382E 00	0.1067E 01	0.4102E 00	0.8770E 00
410.0	0.1076E-02	0.6727E 01	0.3581E 00	0.1011E 01	0.4149E 00	0.8660E 0C
422.2	0.1157E-02	0.6656E 01	0.3785E 00	0.9562E 00	0.4290E 00	0.8330E 00
432.0	0.1712E-02	0.6270E 01	0.4556E 00	0.7737E 00	0.4819E 00	0.7184E 00
435.5	0.1420E-02	0.6454E 01	0.4751E 00	0.7326E 00	0.5306E 00	0.6238E 00
438.6	0.1181E-02	0.6635E 01	0.4264E 00	0.8391E 00	0.4715E 00	0.7401E 00
444.4	0.1010E-02	0.6789E 01	0.4363E 00	0.8164E 00	0.5261E 00	0.6321E 00
450.1	0.1830E-02	0.6204E 01	0.4546E 00	0.7759E 00	0.5137E 00	0.6556E 00
455.9	0.1408E-02	0.6463E 01	0.4594E 00	0.7657E 00	0.5400E 00	0.6065E 00
461.2	0.1324E-02	0.6523E 01	0.5388E 00	0.6087E 00	0.6354E 00	0.4464E 00
462.0	0.1099E-02	0.6706E 01	0.4573E 00	0.7702E 00	0.5254E 00	0.6335E 00
468.7	0.1724E-02	0.6263E 01	0.4655E 00	0.7526E 00	0.5661E 00	0.5601E 00
477.7	0.1354E-02	0.6501E 01	0.4850E 00	0.7121E 00	0.5601E 00	0.5705E 00
480.0	0.1297E-02	0.6543E 01	0.4836E 00	0.7151E 00	0.5544E 00	0.5807E 00
489.4	0.1048E-02	0.6753E 01	0.4780E 00	0.7265E 00	0.5681E 00	0.5565E 00
495.2	0.1412E-02	0.6459E 01	0.4755E 00	0.7317E 00	0.5697E 00	0.5539E 00
510.0	0.9794E-03	0.6819E 01	0.4956E 00	0.6910E 00	0.4750E 00	0.7327E 00
515.1	0.1166E-02	0.6648E 01	0.5058E 00	0.6708E 00	0.5933E 00	0.5139E 00
529.8	0.1423E-02	0.6452E 01	0.5449E 00	0.5976E 00	0.6004E 00	0.5022E 00
541.4	0.1397E-02	0.6470E 01	0.5475E 00	0.5929E 00	0.6313E 00	0.4527E 00
544.3	0.1377E-02	0.6484E 01	0.5991E 00	0.5043E 00	0.6473E 00	0.4281E 00
551.8	0.1559E-02	0.6362E 01	0.6149E 00	0.4786E 00	0.6758E 00	0.3856E 00
561.9	0.1600E-02	0.6336E 01	0.6285E 00	0.4571E 00	0.6751E 00	0.3867E 00
564.1	0.1603E-02	0.6335E 01	0.6164E 00	0.4762E 00	0.6601E 00	0.4088E 00
572.5	0.1652E-02	0.6305E 01	0.6352E 00	0.4467E 00	0.6712E 00	0.3924E 00
577.3	0.1384E-02	0.6479E 01	0.6504E 00	0.4234E 00	0.6735E 00	0.3891E 00
584.8	0.1436E-02	0.6443E 01	0.6541E 00	0.4178E 00	0.6732E 00	0.3894E 00
588.7	0.1839E-02	0.6199E 01	0.6603E 00	0.4085E 00	0.6921E 00	0.3622E 00
599.6	0.9417E-03	0.6858E 01	0.4162E 00	0.8628E 00	0.4897E 00	0.7028E 00
600.8	0.1408E-02	0.6462E 01	0.5300E 00	0.6249E 00	0.6478E 00	0.4274E 00
610.9	0.1411E-02	0.6460E 01	0.4093E 00	0.8793E 00	0.4767E 00	0.7291E 00
624.2	0.9772E-03	0.6822E 01	0.4386E 00	0.8111E 00	0.5212E 00	0.6414E 00
627.3	0.1137E-02	0.6672E 01	0.4575E 00	0.7697E 00	0.4929E 00	0.6964E 00
630.0	0.1262E-02	0.6570E 01	0.4614E 00	0.7613E 00	0.4993E 00	0.6837E 00
645.0	0.9908E-03	0.6808E 01	0.5450E 00	0.5975E 00	0.5791E 00	0.5377E 00
645.9	0.1105E-02	0.6701E 01	0.5314E 00	0.6222E 00	0.5624E 00	0.5665E 00
665.0	0.8849E-03	0.6919E 01	0.5354E 00	0.6150E 00	0.5610E 00	0.5689E 00
675.0	0.1191E-02	0.6627E 01	0.5360E 00	0.6137E 00	0.5622E 00	0.5668E 00
700.0	0.2085E-02	0.6076E 01	0.4743E 00	0.7341E 00	0.5030E 00	0.6763E 00

Wave-length (nm)	PACIFIC GROVE OUTFALL STA PG-1(S) TRANSMISSION	ATT. COEF. (1/m)	PACIFIC GROVE OUTFALL STA PG-2(S) TRANSMISSION	ATT. COEF. (1/m)	PACIFIC GROVE OUTFALL STA PG-3(S) TRANSMISSION	ATT. COEF. (1/m)
375.0	0.5030E 00	0.6763E 00	0.4625E 00	0.7589E 00	0.2228E 00	0.1478E 01
400.0	0.5449E 00	0.5976E 00	0.5219E 00	0.6400E 00	0.2453E 00	0.1383E 01
410.0	0.5470E 00	0.5939E 00	0.5381E 00	0.6099E 00	0.2515E 00	0.1359E 01
422.2	0.5457E 00	0.5962E 00	0.5278E 00	0.6289E 00	0.2544E 00	0.1247E 01
432.0	0.6347E 00	0.4475E 00	0.5491E 00	0.5900E 00	0.2936E 00	0.1206E 01
435.5	0.6687E 00	0.3961E 00	0.5964E 00	0.5087E 00	0.3137E 00	0.1141E 01
438.6	0.5971E 00	0.5075E 00	0.5252E 00	0.6339E 00	0.2781E 00	0.1[illegible]59E 01
444.4	0.6413E 00	0.4373E 00	0.5342E 00	0.6171E 00	0.2828E 00	0.1[illegible]43E 01
450.1	0.6066E 00	0.4920E 00	0.5799E 00	0.5364E 00	0.2745E 00	0.1[illegible]73E 01
455.9	0.6116E 00	0.4839E 00	0.6193E 00	0.4716E 00	0.2905E 00	0.1[illegible]17E 01
461.2	0.7082E 00	0.3396E 00	0.6844E 00	0.3733E 00	0.3362E 00	0.1[illegible]73E 01
462.0	0.6012E 00	0.5007E 00	0.5990E 00	0.5044E 00	0.2858E 00	0.1[illegible]33E 01
468.7	0.6408E 00	0.4380E 00	0.6106E 00	0.4855E 00	0.3190E 00	0.1125E 01
477.7	0.6525E 00	0.4203E 00	0.6032E 00	0.4975E 00	0.3201E 00	0.1121E 01
480.0	0.6405E 00	0.4385E 00	0.5933E 00	0.5139E 00	0.3220E 00	0.1115E 01
489.4	0.6237E 00	0.4647E 00	0.5545E 00	0.5804E 00	0.3396E 00	0.1063E 01
495.2	0.6544E 00	0.4174E 00	0.6309E 00	0.4534E 00	0.3178E 00	0.1128E 01
510.0	0.6601E 00	0.4088E 00	0.6582E 00	0.4117E 00	0.3301E 00	0.1091E 01
515.1	0.6504E 00	0.4234E 00	0.6620E 00	0.4060E 00	0.3147E 00	0.1138E 01
529.8	0.6672E 00	0.3982E 00	0.6416E 00	0.4368E 00	0.3343E 00	0.1078E 01
541.4	0.6397E 00	0.4297E 00	0.6677E 00	0.3976E 00	0.3394E 00	0.1064E 01
544.3	0.6322E 00	0.4514E 00	0.6583E 00	0.4115E 00	0.3429E 00	0.1053E 01
551.8	0.6503E 00	0.4235E 00	0.6872E 00	0.3693E 00	0.3528E 00	0.1025E 01
561.9	0.6518E 00	0.4213E 00	0.6998E 00	0.3513E 00	0.3652E 00	0.9915E 00
564.1	0.6499E 00	0.4241E 00	0.6980E 00	0.3539E 00	0.3614E 00	0.1002E 01
572.5	0.6652E 00	0.4012E 00	0.7088E 00	0.3388E 00	0.3694E 00	0.9802E 00
577.3	0.6612E 00	0.4072E 00	0.7181E 00	0.3260E 00	0.3783E 00	0.9569E 00
584.8	0.6573E 00	0.4130E 00	0.7179E 00	0.3262E 00	0.3765E 00	0.9614E 00
588.7	0.6720E 00	0.3912E 00	0.7372E 00	0.3001E 00	0.3912E 00	0.9238E 00
599.6	0.4369E 00	0.8149E 00	0.5386E 00	0.6090E 00	0.2674E 00	0.1298E 01
600.8	0.5453E 00	0.5968E 00	0.6951E 00	0.3579E 00	0.3482E 00	0.1038E 01
610.9	0.4030E 00	0.8945E 00	0.5332E 00	0.6190E 00	0.2635E 00	0.1313E 01
624.2	0.5125E 00	0.6580E 00	0.5907E 00	0.5182E 00	0.2964E 00	0.1197E 01
627.3	0.4499E 00	0.7862E 00	0.5384E 00	0.6095E 00	0.2717E 00	0.1283E 01
630.0	0.4852E 00	0.7117E 00	0.5568E 00	0.5764E 00	0.2735E 00	0.1276E 01
645.0	0.5681E 00	0.5566E 00	0.6440E 00	0.4331E 00	0.3237E 00	0.1110E 01
645.9	0.5513E 00	0.5860E 00	0.6209E 00	0.4690E 00	0.3038E 00	0.1172E 01
665.0	0.5522E 00	0.5845E 00	0.6300E 00	0.4547E 00	0.3327E 00	0.1083E 01
675.0	0.5634E 00	0.5647E 00	0.6182E 00	0.4733E 00	0.3323E 00	0.1084E 01
700.0	0.7402E 00	0.2961E 00	0.5473E 00	0.5932E 00	0.2971E 00	0.1195E 01

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Wave-length (nm)	DISTILLED WATER		MONTEREY OUTFALL STA 500N(S)		MONTEREY OUTFALL STA 500N(B)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.1106E 01	-.9946E-01	0.3872E 00	0.9338E 00	0.4251E 00	0.8420E 00
400.0	0.1196E 01	-.1762E 00	0.4668E 00	0.7499E 00	0.5041E 00	0.6743E 00
410.0	0.1127E 01	-.1174E 00	0.4620E 00	0.7600E 00	0.5026E 00	0.6772E 00
422.2	0.1178E 01	-.1613E 00	0.4995E 00	0.6831E 00	0.5370E 00	0.6119E 00
432.0	0.1202E 01	-.1809E 00	0.5150E 00	0.6531E 00	0.5722E 00	0.5494E 00
435.5	0.1204E 01	-.1827E 00	0.5240E 00	0.6361E 00	0.5880E 00	0.5227E 00
438.6	0.1233E 01	-.2061E 00	0.5401E 00	0.6063E 00	0.5885E 00	0.5218E 00
444.4	0.1186E 01	-.1683E 00	0.5520E 00	0.5848E 00	0.6028E 00	0.4983E 00
450.1	0.1192E 01	-.1726E 00	0.5608E 00	0.5693E 00	0.6221E 00	0.4672E 00
455.9	0.1333E 01	-.2827E 00	0.6406E 00	0.4384E 00	0.7179E 00	0.3261E 00
461.2	0.1346E 01	-.2923E 00	0.6615E 00	0.4068E 00	0.7299E 00	0.3099E 00
462.0	0.1344E 01	-.2912E 00	0.6609E 00	0.4076E 00	0.7398E 00	0.2967E 00
468.7	0.1252E 01	-.2211E 00	0.5629E 00	0.5656E 00	0.6679E 00	0.3972E 00
477.7	0.1259E 01	-.2265E 00	0.5777E 00	0.5401E 00	0.6882E 00	0.3678E 00
480.0	0.1304E 01	-.2610E 00	0.6003E 00	0.5023E 00	0.7211E 00	0.3219E 00
489.4	0.1288E 01	-.2491E 00	0.5906E 00	0.5184E 00	0.7182E 00	0.3258E 00
495.2	0.1301E 01	-.2592E 00	0.6646E 00	0.4021E 00	0.7416E 00	0.2942E 00
510.0	0.1286E 01	-.2478E 00	0.6786E 00	0.3816E 00	0.7496E 00	0.2836E 00
515.1	0.1260E 01	-.2275E 00	0.6733E 00	0.3893E 00	0.7500E 00	0.2832E 00
529.8	0.1270E 01	-.2349E 00	0.6990E 00	0.3524E 00	0.7432E 00	0.2921E 00
541.4	0.1325E 01	-.2769E 00	0.7391E 00	0.2975E 00	0.7981E 00	0.2219E 00
544.3	0.1325E 01	-.2769E 00	0.7352E 00	0.3028E 00	0.8060E 00	0.2123E 00
551.8	0.1317E 01	-.2707E 00	0.7455E 00	0.2891E 00	0.8129E 00	0.2038E 00
561.9	0.1314E 01	-.2690E 00	0.7557E 00	0.2757E 00	0.8050E 00	0.2135E 00
564.1	0.1315E 01	-.2694E 00	0.7520E 00	0.2806E 00	0.8192E 00	0.1963E 00
572.5	0.1315E 01	-.2695E 00	0.7638E 00	0.2652E 00	0.8375E 00	0.1745E 00
577.3	0.1301E 01	-.2591E 00	0.7623E 00	0.2672E 00	0.8368E 00	0.1754E 00
584.8	0.1266E 01	-.2322E 00	0.7491E 00	0.2843E 00	0.8236E 00	0.1910E 00
588.7	0.1236E 01	-.2082E 00	0.7467E 00	0.2875E 00	0.8133E 00	0.2034E 00
599.6	0.1146E 01	-.1344E 00	0.9675E 00	0.3256E-01	0.7594E 00	0.2709E 00
600.8	0.1063E 01	-.5980E-01	0.9093E 00	0.9358E-01	0.6882E 00	0.3678E 00
610.9	0.1010E 01	-.1009E-01	0.6434E 00	0.4340E 00	0.6942E 00	0.3592E 00
624.2	0.9370E 00	0.6401E-01	0.7087E 00	0.3388E 00	0.6372E 00	0.4436E 00
627.3	0.1026E 01	-.2479E-01	0.7006E 00	0.3503E 00	0.7174E 00	0.3268E 00
630.0	0.1040E 01	-.3900E-01	0.6792E 00	0.3808E 00	0.7081E 00	0.3398E 00
645.0	0.1002E 01	-.2348E-02	0.7037E 00	0.3458E 00	0.7312E 00	0.3081E 00
645.9	0.1009E 01	-.8962E-02	0.6953E 00	0.3576E 00	0.7310E 00	0.3084E 00
665.0	0.9366E 00	0.6444E-01	0.6540E 00	0.4180E 00	0.6845E 00	0.3732E 00
675.0	0.9424E 00	0.5835E-01	0.6881E 00	0.3679E 00	0.6657E 00	0.4005E 00
700.0	0.8449E 00	0.1658E 00	0.6254E 00	0.4619E 00	0.6222E 00	0.4670E 00

Wave-length (nm)	MONTEREY OUTFALL STA 400N(S)		MONTEREY OUTFALL STA 400N(B)		MONTEREY OUTFALL STA 300N(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.3678E 00	0.9844E 00	0.3038E 00	0.1173E 01	0.2222E 00	0.1480E 01
400.0	0.4256E 00	0.8408E 00	0.3656E 00	0.9904E 00	0.2755E 00	0.1269E 01
410.0	0.4442E 00	0.7987E 00	0.3704E 00	0.9774E 00	0.2821E 00	0.1246E 01
422.2	0.4662E 00	0.7510E 00	0.3955E 00	0.9131E 00	0.3172E 00	0.1130E 01
432.0	0.4886E 00	0.7049E 00	0.4098E 00	0.8780E 00	0.3350E 00	0.1076E 01
435.5	0.5080E 00	0.6666E 00	0.4176E 00	0.8595E 00	0.3320E 00	0.1085E 01
438.6	0.5177E 00	0.6479E 00	0.4209E 00	0.8518E 00	0.3557E 00	0.1017E 01
444.4	0.5203E 00	0.6431E 00	0.4283E 00	0.8346E 00	0.3648E 00	0.9925E 00
450.1	0.5170E 00	0.6494E 00	0.4381E 00	0.8123E 00	0.3689E 00	0.9816E 00
455.9	0.5890E 00	0.5210E 00	0.5202E 00	0.6433E 00	0.4329E 00	0.8240E 00
461.2	0.6083E 00	0.4893E 00	0.5398E 00	0.6068E 00	0.4410E 00	0.8058E 00
462.0	0.6083E 00	0.4892E 00	0.5445E 00	0.5983E 00	0.4393E 00	0.8095E 00
468.7	0.5629E 00	0.5656E 00	0.4747E 00	0.7333E 00	0.4172E 00	0.8605E 00
477.7	0.5777E 00	0.5401E 00	0.4814E 00	0.7196E 00	0.4350E 00	0.8192E 00
480.0	0.5932E 00	0.5140E 00	0.5044E 00	0.6736E 00	0.4511E 00	0.7835E 00
489.4	0.5876E 00	0.5233E 00	0.5105E 00	0.6619E 00	0.4570E 00	0.7707E 00
495.2	0.5247E 00	0.6347E 00	0.5317E 00	0.6217E 00	0.4827E 00	0.7168E 00
510.0	0.5395E 00	0.6074E 00	0.5565E 00	0.5768E 00	0.5054E 00	0.6716E 00
515.1	0.6000E 00	0.5028E 00	0.5600E 00	0.5707E 00	0.5067E 00	0.6692E 00
529.8	0.6428E 00	0.4350E 00	0.5906E 00	0.5184E 00	0.5263E 00	0.6318E 00
541.4	0.6920E 00	0.3624E 00	0.5819E 00	0.5330E 00	0.5662E 00	0.5599E 00
544.3	0.6880E 00	0.3680E 00	0.6251E 00	0.4624E 00	0.5662E 00	0.5599E 00
551.8	0.7059E 00	0.3429E 00	0.6305E 00	0.4540E 00	0.5829E 00	0.5312E 00
561.9	0.7187E 00	0.3250E 00	0.6489E 00	0.4256E 00	0.5873E 00	0.5238E 00
564.1	0.7268E 00	0.3141E 00	0.6595E 00	0.4097E 00	0.5881E 00	0.5225E 00
572.5	0.7247E 00	0.3169E 00	0.6683E 00	0.3967E 00	0.5989E 00	0.5046E 00
577.3	0.7360E 00	0.3017E 00	0.6747E 00	0.3873E 00	0.6046E 00	0.4953E 00
584.8	0.7229E 00	0.3194E 00	0.6571E 00	0.4132E 00	0.6046E 00	0.4953E 00
588.7	0.7111E 00	0.3356E 00	0.6578E 00	0.4123E 00	0.6133E 00	0.4811E 00
599.6	0.6754E 00	0.3863E 00	0.6389E 00	0.4410E 00	0.5476E 00	0.5927E 00
600.8	0.5991E 00	0.5043E 00	0.5491E 00	0.5899E 00	0.5099E 00	0.6629E 00
610.9	0.6152E 00	0.4781E 00	0.5757E 00	0.5435E 00	0.5018E 00	0.6788E 00
624.2	0.6338E 00	0.4489E 00	0.5213E 00	0.6411E 00	0.4770E 00	0.7285E 00
627.3	0.6204E 00	0.4699E 00	0.5782E 00	0.5393E 00	0.5317E 00	0.6216E 00
630.0	0.6165E 00	0.4760E 00	0.5876E 00	0.5233E 00	0.5347E 00	0.6163E 00
645.0	0.6419E 00	0.4363E 00	0.5836E 00	0.5301E 00	0.5664E 00	0.5595E 00
645.9	0.6347E 00	0.4474E 00	0.5741E 00	0.5462E 00	0.5705E 00	0.5523E 00
665.0	0.6152E 00	0.4782E 00	0.5625E 00	0.5663E 00	0.5431E 00	0.6008E 00
675.0	0.5984E 00	0.5055E 00	0.5535E 00	0.5822E 00	0.5498E 00	0.5889E 00
700.0	0.5528E 00	0.5834E 00	0.4955E 00	0.6911E 00	0.5133E 00	0.6565E 00

Wave-length (nm)	MONTEREY OUTFALL STA 300N(B)		MONTEREY OUTFALL STA 175N(S)		MONTEREY OUTFALL STA 175N(B)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.2795E 00	0.1255E 01	0.3290E 00	0.1094E 01	0.1815E 00	0.1680E 01
400.0	0.3370E 00	0.1071E 01	0.3893E 00	0.9285E 00	0.2252E 00	0.1467E 01
410.0	0.3494E 00	0.1035E 01	0.3992E 00	0.9038E 00	0.2298E 00	0.1447E 01
422.2	0.3905E 00	0.9256E 00	0.4329E 00	0.8240E 00	0.2606E 00	0.1324E 01
432.0	0.4037E 00	0.8929E 00	0.4340E 00	0.8215E 00	0.2663E 00	0.1302E 01
435.5	0.4144E 00	0.8671E 00	0.4372E 00	0.8143E 00	0.2744E 00	0.1273E 01
438.6	0.4283E 00	0.8345E 00	0.4432E 00	0.8008E 00	0.2883E 00	0.1224E 01
444.4	0.4378E 00	0.8130E 00	0.4568E 00	0.7711E 00	0.3109E 00	0.1150E 01
450.1	0.4512E 00	0.7832E 00	0.4556E 00	0.7737E 00	0.3106E 00	0.1151E 01
455.9	0.5331E 00	0.6192E 00	0.5460E 00	0.5956E 00	0.3585E 00	0.1010E 01
461.2	0.5474E 00	0.5930E 00	0.5588E 00	0.5727E 00	0.3619E 00	0.1000E 01
462.0	0.5407E 00	0.6051E 00	0.5595E 00	0.5715E 00	0.3650E 00	0.9920E 00
468.7	0.5041E 00	0.6742E 00	0.5083E 00	0.6660E 00	0.3361E 00	0.1073E 01
477.7	0.5206E 00	0.6425E 00	0.5171E 00	0.6492E 00	0.3694E 00	0.9801E 00
480.0	0.5470E 00	0.5938E 00	0.5364E 00	0.6131E 00	0.3872E 00	0.9339E 00
489.4	0.5164E 00	0.6505E 00	0.5431E 00	0.6009E 00	0.3917E 00	0.9224E 00
495.2	0.5842E 00	0.5291E 00	0.5667E 00	0.5590E 00	0.4163E 00	0.8626E 00
510.0	0.6133E 00	0.4811E 00	0.5878E 00	0.5230E 00	0.4316E 00	0.8270E 00
515.1	0.5900E 00	0.5193E 00	0.5900E 00	0.5193E 00	0.4300E 00	0.8307E 00
529.8	0.6267E 00	0.4599E 00	0.6066E 00	0.4920E 00	0.4379E 00	0.8128E 00
541.4	0.6841E 00	0.3737E 00	0.6409E 00	0.4379E 00	0.4757E 00	0.7312E 00
544.3	0.6802E 00	0.3793E 00	0.6448E 00	0.4319E 00	0.4875E 00	0.7071E 00
551.8	0.6860E 00	0.3709E 00	0.6543E 00	0.4175E 00	0.4957E 00	0.6908E 00
561.9	0.6818E 00	0.3770E 00	0.6448E 00	0.4319E 00	0.5052E 00	0.6721E 00
564.1	0.7058E 00	0.3430E 00	0.6553E 00	0.4159E 00	0.5167E 00	0.6499E 00
572.5	0.7160E 00	0.3288E 00	0.6683E 00	0.3967E 00	0.5294E 00	0.6259E 00
577.3	0.7185E 00	0.3254E 00	0.6747E 00	0.3873E 00	0.5301E 00	0.6247E 00
584.8	0.7097E 00	0.3375E 00	0.6659E 00	0.4002E 00	0.5257E 00	0.6329E 00
588.7	0.7022E 00	0.3479E 00	0.6667E 00	0.3991E 00	0.5111E 00	0.6606E 00
599.6	0.6425E 00	0.4354E 00	0.6389E 00	0.4410E 00	0.5330E 00	0.6193E 00
600.8	0.5848E 00	0.5280E 00	0.5955E 00	0.5102E 00	0.4957E 00	0.6908E 00
610.9	0.5870E 00	0.5244E 00	0.5870E 00	0.5244E 00	0.4877E 00	0.7068E 00
624.2	0.5452E 00	0.5971E 00	0.5963E 00	0.5089E 00	0.4566E 00	0.7716E 00
627.3	0.6077E 00	0.4902E 00	0.5993E 00	0.5040E 00	0.4980E 00	0.6862E 00
630.0	0.6165E 00	0.4760E 00	0.5925E 00	0.5152E 00	0.5009E 00	0.6804E 00
645.0	0.6660E 00	0.4001E 00	0.6316E 00	0.4522E 00	0.5321E 00	0.6210E 00
645.9	0.6668E 00	0.3989E 00	0.6312E 00	0.4529E 00	0.5313E 00	0.6224E 00
665.0	0.6069E 00	0.4916E 00	0.5930E 00	0.5143E 00	0.4822E 00	0.7180E 00
675.0	0.6133E 00	0.4811E 00	0.5909E 00	0.5178E 00	0.4937E 00	0.6948E 00
700.0	0.5415E 00	0.6037E 00	0.5246E 00	0.6350E 00	0.4495E 00	0.7870E 00

Wave-length (nm)	MONTEREY OUTFALL STA 100N(S)		MONTEREY OUTFALL STA 100N(B)		MONTEREY OUTFALL STA BOIL(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.3969E 00	0.9095E 00	0.1844E 00	0.1664E 01	0.3581E 00	0.1011E 01
400.0	0.4397E 00	0.8088E 00	0.2179E 00	0.1500E 01	0.6488E 00	0.4258E 00
410.0	0.4418E 00	0.8041E 00	0.2144E 00	0.1516E 01	0.5228E 00	0.6383E 00
422.2	0.4787E 00	0.7250E 00	0.2452E 00	0.1384E 01	0.4704E 00	0.7423E 00
432.0	0.5018E 00	0.6787E 00	0.2469E 00	0.1377E 01	0.4842E 00	0.7138E 00
435.5	0.5200E 00	0.6436E 00	0.2468E 00	0.1377E 01	0.4920E 00	0.6981E 00
438.6	0.5364E 00	0.6131E 00	0.2525E 00	0.1355E 01	0.5066E 00	0.6694E 00
444.4	0.5615E 00	0.5680E 00	0.2687E 00	0.1293E 01	0.5234E 00	0.6371E 00
450.1	0.5520E 00	0.5849E 00	0.2615E 00	0.1320E 01	0.5126E 00	0.6578E 00
455.9	0.6406E 00	0.4384E 00	0.3710E 00	0.9759E 00	0.6320E 00	0.4517E 00
461.2	0.7261E 00	0.3150E 00	0.3159E 00	0.1134E 01	0.6501E 00	0.4239E 00
462.0	0.6684E 00	0.3965E 00	0.3237E 00	0.1110E 01	0.5745E 00	0.5455E 00
468.7	0.6301E 00	0.4545E 00	0.3029E 00	0.1176E 01	0.5209E 00	0.6419E 00
477.7	0.6312E 00	0.4529E 00	0.3213E 00	0.1118E 01	0.5456E 00	0.5964E 00
480.0	0.6536E 00	0.4186E 00	0.3364E 00	0.1072E 01	0.5506E 00	0.5874E 00
489.4	0.6440E 00	0.4331E 00	0.3354E 00	0.1075E 01	0.5164E 00	0.6505E 00
495.2	0.7101E 00	0.3369E 00	0.3477E 00	0.1040E 01	0.5877E 00	0.5232E 00
510.0	0.7298E 00	0.3101E 00	0.3436E 00	0.1052E 01	0.6190E 00	0.4721E 00
515.1	0.6933E 00	0.3605E 00	0.3353E 00	0.1075E 01	0.6233E 00	0.4652E 00
529.8	0.7472E 00	0.2868E 00	0.3596E 00	0.1007E 01	0.6749E 00	0.3869E 00
541.4	0.8021E 00	0.2171E 00	0.3936E 00	0.9178E 00	0.7274E 00	0.3133E 00
544.3	0.7785E 00	0.2465E 00	0.4069E 00	0.8850E 00	0.7313E 00	0.3080E 00
551.8	0.7931E 00	0.2282E 00	0.4065E 00	0.8861E 00	0.7297E 00	0.3102E 00
561.9	0.7968E 00	0.2236E 00	0.4152E 00	0.8651E 00	0.7516E 00	0.2810E 00
564.1	0.8150E 00	0.2014E 00	0.4251E 00	0.8419E 00	0.7730E 00	0.2535E 00
572.5	0.8158E 00	0.2003E 00	0.4253E 00	0.8415E 00	0.7942E 00	0.2269E 00
577.3	0.8324E 00	0.1806E 00	0.4122E 00	0.8722E 00	0.7886E 00	0.2338E 00
584.8	0.8411E 00	0.1703E 00	0.4162E 00	0.8628E 00	0.7842E 00	0.2393E 00
588.7	0.8622E 00	0.1459E 00	0.4191E 00	0.8559E 00	0.7733E 00	0.2530E 00
599.6	0.7776E 00	0.2476E 00	0.4005E 00	0.9007E 00	0.7448E 00	0.2901E 00
600.8	0.6918E 00	0.3627E 00	0.3733E 00	0.9697E 00	0.6561E 00	0.4148E 00
610.9	0.6773E 00	0.3835E 00	0.3680E 00	0.9839E 00	0.6886E 00	0.3672E 00
624.2	0.6917E 00	0.3628E 00	0.3428E 00	0.1054E 01	0.7053E 00	0.3436E 00
627.3	0.6710E 00	0.3927E 00	0.3807E 00	0.9506E 00	0.6415E 00	0.4370E 00
630.0	0.6888E 00	0.3669E 00	0.3877E 00	0.9325E 00	0.6503E 00	0.4236E 00
645.0	0.6969E 00	0.3555E 00	0.3913E 00	0.9234E 00	0.6385E 00	0.4416E 00
645.9	0.7060E 00	0.3426E 00	0.3994E 00	0.9034E 00	0.7060E 00	0.3426E 00
665.0	0.6789E 00	0.3812E 00	0.3907E 00	0.9250E 00	0.6983E 00	0.3534E 00
675.0	0.6732E 00	0.3895E 00	0.3740E 00	0.9681E 00	0.7068E 00	0.3415E 00
700.0	0.5948E 00	0.5114E 00	0.3640E 00	0.9948E 00	0.7166E 00	0.3279E 00

Wave-length (nm)	MONTEREY OUTFALL STA BOIL(B)		MONTEREY OUTFALL STA 100S(S)		MONTEREY OUTFALL STA 200S(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.3193E 00	0.1124E 01	0.2892E 00	0.1221E 01	0.3882E 00	0.9314E 00
400.0	0.3728E 00	0.9711E 00	0.3661E 00	0.9891E 00	0.4663E 00	0.7509E 00
410.0	0.3696E 00	0.9796E 00	0.3777E 00	0.9583E 00	0.4580E 00	0.7686E 00
422.2	0.3797E 00	0.9532E 00	0.4046E 00	0.8905E 00	0.4912E 00	0.6997E 00
432.0	0.4063E 00	0.8865E 00	0.4160E 00	0.8633E 00	0.5106E 00	0.6615E 00
435.5	0.4172E 00	0.8604E 00	0.4352E 00	0.8188E 00	0.4520E 00	0.7816E 00
438.6	0.4358E 00	0.8175E 00	0.4432E 00	0.8008E 00	0.5401E 00	0.6063E 00
444.4	0.4568E 00	0.7711E 00	0.4568E 00	0.7711E 00	0.5488E 00	0.5905E 00
450.1	0.4556E 00	0.7737E 00	0.4644E 00	0.7550E 00	0.5520E 00	0.5849E 00
455.9	0.5331E 00	0.6192E 00	0.5331E 00	0.6192E 00	0.6277E 00	0.4584E 00
461.2	0.5474E 00	0.5930E 00	0.5436E 00	0.5999E 00	0.6425E 00	0.4355E 00
462.0	0.5445E 00	0.5983E 00	0.5407E 00	0.6051E 00	0.6571E 00	0.4132E 00
468.7	0.4747E 00	0.7333E 00	0.5083E 00	0.6660E 00	0.5545E 00	0.5804E 00
477.7	0.4885E 00	0.7051E 00	0.5206E 00	0.6425E 00	0.5705E 00	0.5523E 00
480.0	0.5115E 00	0.6598E 00	0.5399E 00	0.6066E 00	0.5932E 00	0.5140E 00
489.4	0.5105E 00	0.6619E 00	0.5431E 00	0.6009E 00	0.5817E 00	0.5333E 00
495.2	0.5597E 00	0.5712E 00	0.5632E 00	0.5651E 00	0.6646E 00	0.4021E 00
510.0	0.5736E 00	0.5471E 00	0.5849E 00	0.5278E 00	0.6843E 00	0.3734E 00
515.1	0.5500E 00	0.5884E 00	0.5800E 00	0.5361E 00	0.6600E 00	0.4090E 00
529.8	0.6107E 00	0.4855E 00	0.5785E 00	0.5387E 00	0.6468E 00	0.4288E 00
541.4	0.6566E 00	0.4141E 00	0.6055E 00	0.4938E 00	0.6959E 00	0.3568E 00
544.3	0.6566E 00	0.4141E 00	0.6015E 00	0.5003E 00	0.7077E 00	0.3403E 00
551.8	0.6821E 00	0.3766E 00	0.6186E 00	0.4727E 00	0.7138E 00	0.3319E 00
561.9	0.6777E 00	0.3830E 00	0.6161E 00	0.4768E 00	0.7187E 00	0.3250E 00
564.1	0.6847E 00	0.3727E 00	0.6301E 00	0.4545E 00	0.7310E 00	0.3085E 00
572.5	0.6813E 00	0.3777E 00	0.6336E 00	0.4492E 00	0.7334E 00	0.3052E 00
577.3	0.6966E 00	0.3559E 00	0.6484E 00	0.4265E 00	0.7316E 00	0.3076E 00
584.8	0.6834E 00	0.3746E 00	0.6309E 00	0.4534E 00	0.7185E 00	0.3254E 00
588.7	0.6800E 00	0.3796E 00	0.6356E 00	0.4461E 00	0.7067E 00	0.3417E 00
599.6	0.6571E 00	0.4132E 00	0.6644E 00	0.4024E 00	0.8141E 00	0.2024E 00
600.8	0.5884E 00	0.5220E 00	0.6276E 00	0.4585E 00	0.7274E 00	0.3132E 00
610.9	0.5870E 00	0.5244E 00	0.6039E 00	0.4964E 00	0.6942E 00	0.3592E 00
624.2	0.5247E 00	0.6347E 00	0.5929E 00	0.5145E 00	0.5929E 00	0.5145E 00
627.3	0.5697E 00	0.5537E 00	0.5697E 00	0.5537E 00	0.6583E 00	0.4114E 00
630.0	0.5780E 00	0.5395E 00	0.5876E 00	0.5233E 00	0.7129E 00	0.3331E 00
645.0	0.6007E 00	0.5016E 00	0.6179E 00	0.4738E 00	0.6866E 00	0.3701E 00
645.9	0.6062E 00	0.4927E 00	0.6169E 00	0.4754E 00	0.6918E 00	0.3627E 00
665.0	0.5542E 00	0.5809E 00	0.5902E 00	0.5189E 00	0.6484E 00	0.4264E 00
675.0	0.5572E 00	0.5756E 00	0.5909E 00	0.5178E 00	0.6470E 00	0.4286E 00
700.0	0.5391E 00	0.6081E 00	0.5189E 00	0.6457E 00	0.6125E 00	0.4824E 00

Wave- length (nm)	MONTEREY OUTFALL STA 200S(B)		MONTEREY OUTFALL STA 300S(S)		MONTEREY OUTFALL STA 300S(B)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.3503E 00	0.1032E 01	0.4086E 00	0.8810E 00	0.2698E 00	0.1289E 01
400.0	0.4024E 00	0.8960E 00	0.4794E 00	0.7237E 00	0.3012E 00	0.1181E 01
410.0	0.4053E 00	0.8889E 00	0.4782E 00	0.7260E 00	0.3481E 00	0.1039E 01
422.2	0.4221E 00	0.8489E 00	0.4704E 00	0.7423E 00	0.3126E 00	0.1144E 01
432.0	0.4327E 00	0.8245E 00	0.5282E 00	0.6282E 00	0.3574E 00	0.1013E 01
435.5	0.4520E 00	0.7816E 00	0.5360E 00	0.6138E 00	0.3532E 00	0.1024E 01
438.6	0.4693E 00	0.7446E 00	0.5438E 00	0.5996E 00	0.3542E 00	0.1021E 01
444.4	0.4727E 00	0.7375E 00	0.5520E 00	0.5848E 00	0.3807E 00	0.9506E 00
450.1	0.4819E 00	0.7185E 00	0.5520E 00	0.5849E 00	0.3768E 00	0.9608E 00
455.9	0.5589E 00	0.5727E 00	0.6363E 00	0.4450E 00	0.4342E 00	0.8211E 00
461.2	0.5512E 00	0.5862E 00	0.6615E 00	0.4068E 00	0.4334E 00	0.8230E 00
462.0	0.5633E 00	0.5650E 00	0.6496E 00	0.4246E 00	0.4619E 00	0.7603E 00
468.7	0.5041E 00	0.6742E 00	0.6007E 00	0.5016E 00	0.3856E 00	0.9378E 00
477.7	0.5242E 00	0.6357E 00	0.6205E 00	0.4698E 00	0.4065E 00	0.8860E 00
480.0	0.5506E 00	0.5874E 00	0.6358E 00	0.4457E 00	0.4263E 00	0.8393E 00
489.4	0.5401E 00	0.6062E 00	0.6470E 00	0.4286E 00	0.4244E 00	0.8436E 00
495.2	0.5737E 00	0.5469E 00	0.6856E 00	0.3715E 00	0.4792E 00	0.7240E 00
510.0	0.5821E 00	0.5326E 00	0.7042E 00	0.3452E 00	0.4998E 00	0.6827E 00
515.1	0.5800E 00	0.5361E 00	0.6833E 00	0.3748E 00	0.5067E 00	0.6692E 00
529.8	0.6147E 00	0.4790E 00	0.7231E 00	0.3190E 00	0.5343E 00	0.6169E 00
541.4	0.6055E 00	0.4938E 00	0.7509E 00	0.2819E 00	0.5583E 00	0.5737E 00
544.3	0.6369E 00	0.4440E 00	0.7627E 00	0.2666E 00	0.5583E 00	0.5737E 00
551.8	0.6424E 00	0.4356E 00	0.7733E 00	0.2531E 00	0.5710E 00	0.5515E 00
561.9	0.6571E 00	0.4132E 00	0.7927E 00	0.2287E 00	0.5791E 00	0.5377E 00
564.1	0.6511E 00	0.4223E 00	0.7898E 00	0.2323E 00	0.5797E 00	0.5366E 00
572.5	0.6726E 00	0.3903E 00	0.8072E 00	0.2108E 00	0.5815E 00	0.5336E 00
577.3	0.6615E 00	0.4067E 00	0.8105E 00	0.2068E 00	0.5870E 00	0.5243E 00
584.8	0.6571E 00	0.4132E 00	0.8017E 00	0.2175E 00	0.5827E 00	0.5316E 00
588.7	0.6444E 00	0.4324E 00	0.7778E 00	0.2474E 00	0.5778E 00	0.5399E 00
599.6	0.6644E 00	0.4024E 00	0.8251E 00	0.1892E 00	0.6133E 00	0.4811E 00
600.8	0.5991E 00	0.5043E 00	0.7631E 00	0.2661E 00	0.5598E 00	0.5710E 00
610.9	0.5983E 00	0.5056E 00	0.7281E 00	0.3123E 00	0.5644E 00	0.5630E 00
624.2	0.5077E 00	0.6672E 00	0.7292E 00	0.3109E 00	0.5247E 00	0.6347E 00
627.3	0.5655E 00	0.5611E 00	0.7259E 00	0.3153E 00	0.5022E 00	0.6779E 00
630.0	0.5684E 00	0.5561E 00	0.7321E 00	0.3069E 00	0.5106E 00	0.6616E 00
645.0	0.5939E 00	0.5129E 00	0.7037E 00	0.3458E 00	0.5596E 00	0.5715E 00
645.9	0.5812E 00	0.5340E 00	0.7060E 00	0.3426E 00	0.5491E 00	0.5899E 00
665.0	0.5487E 00	0.5908E 00	0.6734E 00	0.3892E 00	0.5237E 00	0.6366E 00
675.0	0.5610E 00	0.5690E 00	0.6694E 00	0.3950E 00	0.5273E 00	0.6299E 00
700.0	0.5133E 00	0.6565E 00	0.5972E 00	0.5074E 00	0.4810E 00	0.7204E 00

Wave-length (nm)	MONTEREY OUTFALL STA 400S(S)		MONTEREY OUTFALL STA 400S(B)		MONTEREY OUTFALL STA 500S(S)	
	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.3862E 00	0.9363E 00	0.2902E 00	0.1218E 01	0.2727E 00	0.1279E 01
400.0	0.4576E 00	0.7695E 00	0.3336E 00	0.1080E 01	0.3404E 00	0.1061E 01
410.0	0.4620E 00	0.7600E 00	0.3453E 00	0.1047E 01	0.3518E 00	0.1028E 01
422.2	0.5079E 00	0.6669E 00	0.3701E 00	0.9784E 00	0.3817E 00	0.9479E 00
432.0	0.5194E 00	0.6447E 00	0.3878E 00	0.9323E 00	0.4023E 00	0.8961E 00
435.5	0.5320E 00	0.6212E 00	0.4228E 00	0.8473E 00	0.4224E 00	0.8482E 00
438.6	0.5438E 00	0.5996E 00	0.4060E 00	0.8872E 00	0.5140E 00	0.6550E 00
444.4	0.5583E 00	0.5736E 00	0.4061E 00	0.8870E 00	0.4949E 00	0.6923E 00
450.1	0.5476E 00	0.5927E 00	0.4201E 00	0.8535E 00	0.5126E 00	0.6578E 00
455.9	0.6449E 00	0.4318E 00	0.4858E 00	0.7106E 00	0.5073E 00	0.6680E 00
461.2	0.6463E 00	0.4296E 00	0.4942E 00	0.6937E 00	0.5436E 00	0.5999E 00
462.0	0.6309E 00	0.4534E 00	0.5032E 00	0.6760E 00	0.4731E 00	0.7366E 00
468.7	0.5671E 00	0.5582E 00	0.4747E 00	0.7333E 00	0.4789E 00	0.7247E 00
477.7	0.5991E 00	0.5043E 00	0.4992E 00	0.6838E 00	0.4529E 00	0.7797E 00
480.0	0.6394E 00	0.4402E 00	0.5257E 00	0.6329E 00	0.4866E 00	0.7089E 00
489.4	0.6440E 00	0.4331E 00	0.5490E 00	0.5902E 00	0.4748E 00	0.7331E 00
495.2	0.6856E 00	0.3715E 00	0.5317E 00	0.6217E 00	0.5002E 00	0.6818E 00
510.0	0.7014E 00	0.3492E 00	0.5537E 00	0.5818E 00	0.5225E 00	0.6390E 00
515.1	0.7100E 00	0.3371E 00	0.5267E 00	0.6311E 00	0.5000E 00	0.6822E 00
529.8	0.7392E 00	0.2974E 00	0.5022E 00	0.6779E 00	0.5504E 00	0.5877E 00
541.4	0.7195E 00	0.3240E 00	0.5426E 00	0.6018E 00	0.5937E 00	0.5132E 00
544.3	0.7391E 00	0.2975E 00	0.5504E 00	0.5877E 00	0.5937E 00	0.5132E 00
551.8	0.7495E 00	0.2838E 00	0.5631E 00	0.5652E 00	0.6067E 00	0.4918E 00
561.9	0.7434E 00	0.2919E 00	0.5668E 00	0.5588E 00	0.5750E 00	0.5447E 00
564.1	0.7520E 00	0.2806E 00	0.6049E 00	0.4947E 00	0.6301E 00	0.4545E 00
572.5	0.8072E 00	0.2108E 00	0.5772E 00	0.5410E 00	0.6423E 00	0.4358E 00
577.3	0.7623E 00	0.2672E 00	0.5958E 00	0.5097E 00	0.6484E 00	0.4265E 00
584.8	0.7579E 00	0.2728E 00	0.5914E 00	0.5169E 00	0.6484E 00	0.4265E 00
588.7	0.7511E 00	0.2817E 00	0.5956E 00	0.5101E 00	0.6578E 00	0.4123E 00
599.6	0.7959E 00	0.2247E 00	0.6462E 00	0.4298E 00	0.6827E 00	0.3757E 00
600.8	0.7774E 00	0.2479E 00	0.5991E 00	0.5043E 00	0.5955E 00	0.5102E 00
610.9	0.7225E 00	0.3200E 00	0.5870E 00	0.5244E 00	0.6378E 00	0.4427E 00
624.2	0.6917E 00	0.3628E 00	0.5418E 00	0.6032E 00	0.5452E 00	0.5971E 00
627.3	0.6626E 00	0.4051E 00	0.5950E 00	0.5109E 00	0.4811E 00	0.7202E 00
630.0	0.6695E 00	0.3949E 00	0.6117E 00	0.4837E 00	0.4865E 00	0.7092E 00
645.0	0.6694E 00	0.3950E 00	0.5973E 00	0.5072E 00	0.5287E 00	0.6274E 00
645.9	0.7488E 00	0.2847E 00	0.6026E 00	0.4985E 00	0.5171E 00	0.6492E 00
665.0	0.5875E 00	0.5236E 00	0.5625E 00	0.5663E 00	0.5016E 00	0.6792E 00
675.0	0.6133E 00	0.4811E 00	0.5759E 00	0.5431E 00	0.4974E 00	0.6874E 00
700.0	0.5811E 00	0.5344E 00	0.5351E 00	0.6155E 00	0.4035E 00	0.8933E 00

Wave-length (nm)	MONTEREY OUTFALL STA 500S(B) TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)	TRANSMISSION	ATT. COEF. (1/m)
375.0	0.1621E 00	0.1791E 01				
400.0	0.2436E 00	0.1390E 01				
410.0	0.2557E 00	0.1342E 01				
422.2	0.3081E 00	0.1159E 01				
432.0	0.3200E 00	0.1121E 01				
435.5	0.3248E 00	0.1107E 01				
438.6	0.3278E 00	0.1098E 01				
444.4	0.3458E 00	0.1045E 01				
450.1	0.2563E 00	0.1340E 01				
455.9	0.2984E 00	0.1190E 01				
461.2	0.3159E 00	0.1134E 01				
462.0	0.3203E 00	0.1121E 01				
468.7	0.3062E 00	0.1165E 01				
477.7	0.3334E 00	0.1081E 01				
480.0	0.3499E 00	0.1034E 01				
489.4	0.3680E 00	0.9839E 00				
495.2	0.3883E 00	0.9311E 00				
510.0	0.4316E 00	0.8270E 00				
515.1	0.4467E 00	0.7933E 00				
529.8	0.4941E 00	0.6938E 00				
541.4	0.5268E 00	0.6308E 00				
544.3	0.5386E 00	0.6090E 00				
551.8	0.5512E 00	0.5863E 00				
561.9	0.5750E 00	0.5447E 00				
564.1	0.5881E 00	0.5225E 00				
572.5	0.5989E 00	0.5046E 00				
577.3	0.6133E 00	0.4811E 00				
584.8	0.6177E 00	0.4741E 00				
588.7	0.6133E 00	0.4811E 00				
599.6	0.6097E 00	0.4870E 00				
600.8	0.5563E 00	0.5772E 00				
610.9	0.5610E 00	0.5689E 00				
624.2	0.5656E 00	0.5608E 00				
627.3	0.5444E 00	0.5985E 00				
630.0	0.5587E 00	0.5729E 00				
645.0	0.5939E 00	0.5129E 00				
645.9	0.5955E 00	0.5102E 00				
665.0	0.5681E 00	0.5566E 00				
675.0	0.5685E 00	0.5559E 00				
700.0	0.5116E 00	0.6596E 00				

APPENDIX C

FOREL-ULE SCALE: WAVELENGTH (nm) AND TRANSMITTANCE (1/cm)

Wave-length (nm)	VII	VIII	IX	X	XI	XI
375.0	0.0	0.0	0.0	0.0	0.0	0.0
400.0	0.0	0.0	0.0	0.0	0.0	0.0
410.0	0.0	0.0	0.0	0.0	0.0	0.0
422.2	0.1209E-01	0.0	0.0	0.0	0.0	0.0
432.0	0.1395E-01	0.0	0.0	0.0	0.0	0.0
435.5	0.1767E-01	0.8370E-02	0.0	0.0	0.0	0.0
436.6	0.2418E-01	0.1116E-01	0.1209E-01	0.0	0.0	0.0
444.4	0.4557E-01	0.2046E-01	0.1488E-01	0.9300E-02	0.0	0.0
450.1	0.9021E-01	0.4650E-01	0.2883E-01	0.1581E-01	0.9300E-03	0.1302E-01
455.9	0.1683E 00	0.1060E 00	0.7068E-01	0.3999E-01	0.1581E-01	0.2790E-01
461.2	0.2697E 00	0.1925E 00	0.1432E 00	0.9579E-01	0.5580E-01	0.6975E-01
462.0	0.2827E 00	0.2055E 00	0.1553E 00	0.1060E 00	0.6510E-01	0.7812E-01
468.7	0.4008E 00	0.3329E 00	0.2818E 00	0.2269E 00	0.1683E 00	0.1860E 00
477.7	0.5059E 00	0.4696E 00	0.4455E 00	0.4064E 00	0.3571E 00	0.3776E 00
480.0	0.5217E 00	0.4933E 00	0.4789E 00	0.4501E 00	0.4083E 00	0.4297E 00
489.4	0.5273E 00	0.5310E 00	0.5515E 00	0.5692E 00	0.5654E 00	0.5915E 00
495.2	0.4975E 00	0.5115E 00	0.5496E 00	0.5850E 00	0.6054E 00	0.6296E 00
510.0	0.3757E 00	0.4064E 00	0.4603E 00	0.5245E 00	0.5868E 00	0.6045E 00
515.1	0.3320E 00	0.3646E 00	0.4204E 00	0.4892E 00	0.5599E 00	0.5766E 00
529.8	0.2325E 00	0.2632E 00	0.3181E 00	0.3925E 00	0.4780E 00	0.4901E 00
541.4	0.1693E 00	0.1981E 00	0.2502E 00	0.3246E 00	0.4138E 00	0.4250E 00
544.3	0.1581E 00	0.1851E 00	0.2371E 00	0.3097E 00	0.3999E 00	0.4111E 00
551.8	0.1339E 00	0.1600E 00	0.2083E 00	0.2818E 00	0.3711E 00	0.3822E 00
561.9	0.1088E 00	0.1321E 00	0.1776E 00	0.2455E 00	0.3367E 00	0.3460E 00
564.1	0.1032E 00	0.1265E 00	0.1720E 00	0.2390E 00	0.3301E 00	0.3376E 00
572.5	0.8928E-01	0.1107E 00	0.1534E 00	0.2195E 00	0.3088E 00	0.3181E 00
577.3	0.8370E-01	0.1042E 00	0.1469E 00	0.2102E 00	0.2995E 00	0.3088E 00
584.8	0.7626E-01	0.9579E-01	0.1376E 00	0.1999E 00	0.2883E 00	0.2976E 00
588.7	0.7440E-01	0.9300E-01	0.1348E 00	0.1962E 00	0.2827E 00	0.2929E 00
599.6	0.6975E-01	0.8835E-01	0.1293E 00	0.1888E 00	0.2809E 00	0.2864E 00
600.8	0.6975E-01	0.8835E-01	0.1293E 00	0.1897E 00	0.2809E 00	0.2864E 00
610.9	0.6882E-01	0.8928E-01	0.1283E 00	0.1906E 00	0.2771E 00	0.2874E 00
624.2	0.7347E-01	0.9300E-01	0.1348E 00	0.1981E 00	0.2855E 00	0.2957E 00
627.3	0.7533E-01	0.9486E-01	0.1367E 00	0.2009E 00	0.2883E 00	0.2985E 00
630.0	0.7626E-01	0.9672E-01	0.1395E 00	0.2037E 00	0.2920E 00	0.3013E 00
645.0	0.8835E-01	0.1097E 00	0.1553E 00	0.2232E 00	0.3134E 00	0.3227E 00
645.9	0.8928E-01	0.1116E 00	0.1572E 00	0.2241E 00	0.3143E 00	0.3246E 00
665.0	0.1116E 00	0.1376E 00	0.1869E 00	0.2604E 00	0.3515E 00	0.3627E 00
675.0	0.1274E 00	0.1562E 00	0.2083E 00	0.2846E 00	0.3757E 00	0.3878E 00
700.0	0.1786E 00	0.2120E 00	0.2706E 00	0.3506E 00	0.4408E 00	0.[illegible]538E 00

FOREL-ULE SCALE: WAVELENGTH (nm) AND TRANSMITTANCE (1/cm)

Wave-length (nm)	I	II	III	IV	V	VI
375.0	0.9179E 00	0.1860E-02	0.0	0.0	0.0	0.0
400.0	0.9737E 00	0.1125E 00	0.2790E-02	0.0	0.0	0.0
410.0	0.9765E 00	0.3236E 00	0.7626E-01	0.0	0.0	0.0
422.2	0.9681E 00	0.5050E 00	0.2111E 00	0.4278E-01	0.2232E-01	0.1209E-01
432.0	0.9495E 00	0.6064E 00	0.3376E 00	0.1255E 00	0.5766E-01	0.2418E-01
435.5	0.9384E 00	0.6352E 00	0.3922E 00	0.1627E 00	0.8091E-01	0.3441E-01
438.6	0.9291E 00	0.6584E 00	0.4231E 00	0.2018E 00	0.1069E 00	0.4836E-01
444.4	0.9067E 00	0.6947E 00	0.4966E 00	0.2846E 00	0.1702E 00	0.8742E-01
450.1	0.8788E 00	0.7170E 00	0.5599E 00	0.3701E 00	0.2520E 00	0.1516E 00
455.9	0.8407E 00	0.7254E 00	0.6138E 00	0.4622E 00	0.3562E 00	0.2483E 00
461.2	0.7989E 00	0.7180E 00	0.6408E 00	0.5282E 00	0.4483E 00	0.3506E 00
462.0	0.7905E 00	0.7152E 00	0.6436E 00	0.5375E 00	0.4585E 00	0.3627E 00
468.7	0.7310E 00	0.6835E 00	0.6417E 00	0.5757E 00	0.5338E 00	0.4650E 00
477.7	0.6408E 00	0.6147E 00	0.5998E 00	0.5729E 00	0.5654E 00	0.5338E 00
480.0	0.6110E 00	0.5915E 00	0.5822E 00	0.5617E 00	0.5626E 00	0.5413E 00
489.4	0.4975E 00	0.4892E 00	0.4873E 00	0.4373E 00	0.5124E 00	0.5161E 00
495.2	0.4297E 00	0.4241E 00	0.4278E 00	0.4343E 00	0.4641E 00	0.4752E 00
510.0	0.2771E 00	0.2753E 00	0.2781E 00	0.2874E 00	0.3236E 00	0.3441E 00
515.1	0.2316E 00	0.2278E 00	0.2334E 00	0.2427E 00	0.2781E 00	0.2985E 00
529.8	0.1404E 00	0.1414E 00	0.1404E 00	0.1488E 00	0.1795E 00	0.1990E 00
541.4	0.9207E-01	0.9207E-01	0.9114E-01	0.9672E-01	0.1237E 00	0.1414E 00
544.3	0.8370E-01	0.8370E-01	0.8277E-01	0.8742E-01	0.1135E 00	0.1293E 00
551.8	0.6882E-01	0.6789E-01	0.6417E-01	0.6975E-01	0.9300E-01	0.1038E 00
561.9	0.5208E-01	0.5115E-01	0.4557E-01	0.5301E-01	0.7161E-01	0.8556E-01
564.1	0.4929E-01	0.4836E-01	0.4185E-01	0.4929E-01	0.6231E-01	0.8184E-01
572.5	0.4185E-01	0.3999E-01	0.3255E-01	0.4092E-01	0.5673E-01	0.6882E-01
577.3	0.3813E-01	0.3720E-01	0.2790E-01	0.3813E-01	0.5301E-01	0.6324E-01
584.8	0.3627E-01	0.3441E-01	0.2325E-01	0.3441E-01	0.4743E-01	0.5859E-01
588.7	0.3441E-01	0.3255E-01	0.2046E-01	0.3348E-01	0.4557E-01	0.5487E-01
599.6	0.3162E-01	0.3069E-01	0.1767E-01	0.2976E-01	0.4185E-01	0.5208E-01
600.8	0.3162E-01	0.3069E-01	0.2046E-01	0.2883E-01	0.4185E-01	0.5115E-01
610.9	0.3162E-01	0.2976E-01	0.2046E-01	0.2883E-01	0.4092E-01	0.5208E-01
624.2	0.3255E-01	0.3069E-01	0.2232E-01	0.2976E-01	0.4464E-01	0.5487E-01
627.3	0.3348E-01	0.3162E-01	0.2232E-01	0.3069E-01	0.4371E-01	0.5580E-01
630.0	0.3348E-01	0.3162E-01	0.2325E-01	0.3069E-01	0.4650E-01	0.5766E-01
645.0	0.3813E-01	0.3720E-01	0.2883E-01	0.3627E-01	0.5394E-01	0.6696E-01
645.9	0.3906E-01	0.3720E-01	0.3069E-01	0.3720E-01	0.5487E-01	0.6789E-01
665.0	0.5022E-01	0.5022E-01	0.4371E-01	0.5022E-01	0.7161E-01	0.8742E-01
675.0	0.5952E-01	0.5952E-01	0.5301E-01	0.6138E-01	0.8463E-01	0.1014E 00
700.0	0.8928E-01	0.9114E-01	0.8742E-01	0.9672E-01	0.1265E 00	0.1479E 00

FOREL-ULE SCALE: WAVELENGTH (nm) AND TRANSMITTANCE (1/cm)

Wave-length (nm)	XII	XIII	XIV	XV	XVI	XVII
375.0	0.0	0.0	0.0	0.0	0.0	0.0
400.0	0.0	0.0	0.0	0.0	0.0	0.0
410.0	0.0	0.0	0.0	0.0	0.0	0.0
422.2	0.0	0.0	0.0	0.0	0.0	0.0
432.0	0.0	0.0	0.0	0.0	0.0	0.0
435.5	0.0	0.0	0.0	0.0	0.0	0.0
438.6	0.0	0.0	0.0	0.0	0.0	0.0
444.4	0.0	0.0	0.0	0.0	0.0	0.0
450.1	0.0	0.9300E-03	0.1860E-02	0.0	0.9300E-03	0.0
455.9	0.7440E-02	0.1395E-01	0.1395E-01	0.8370E-02	0.1209E-01	0.8370E-02
461.2	0.4743E-01	0.5022E-01	0.4557E-01	0.3627E-01	0.3627E-01	0.2790E-01
462.0	0.5580E-01	0.5766E-01	0.5301E-01	0.4371E-01	0.4092E-01	0.3162E-01
468.7	0.1553E 00	0.1460E 00	0.1293E 00	0.1079E 00	0.9393E-01	0.7068E-01
477.7	0.3339E 00	0.3022E 00	0.2595E 00	0.2130E 00	0.1767E 00	0.1302E 00
480.0	0.3822E 00	0.3432E 00	0.2939E 00	0.2399E 00	0.1990E 00	0.1451E 00
489.4	0.5282E 00	0.4669E 00	0.3980E 00	0.3227E 00	0.2567E 00	0.1851E 00
495.2	0.5645E 00	0.4966E 00	0.4231E 00	0.3422E 00	0.2706E 00	0.1944E 00
510.0	0.5459E 00	0.4799E 00	0.4111E 00	0.3367E 00	0.2669E 00	0.1953E 00
515.1	0.5199E 00	0.4594E 00	0.3952E 00	0.3255E 00	0.2613E 00	0.1925E 00
529.8	0.4445E 00	0.3971E 00	0.3478E 00	0.2939E 00	0.2418E 00	0.1888E 00
541.4	0.3878E 00	0.3497E 00	0.3097E 00	0.2697E 00	0.2288E 00	0.1869E 00
544.3	0.3766E 00	0.3385E 00	0.3013E 00	0.2650E 00	0.2260E 00	0.1869E 00
551.8	0.3506E 00	0.3171E 00	0.2846E 00	0.2548E 00	0.2195E 00	0.1860E 00
561.9	0.3218E 00	0.2911E 00	0.2650E 00	0.2418E 00	0.2120E 00	0.1869E 00
564.1	0.3162E 00	0.2864E 00	0.2604E 00	0.2399E 00	0.2111E 00	0.1869E 00
572.5	0.3004E 00	0.2706E 00	0.2492E 00	0.2334E 00	0.2074E 00	0.1888E 00
577.3	0.2920E 00	0.2650E 00	0.2437E 00	0.2316E 00	0.2065E 00	0.1916E 00
584.8	0.2846E 00	0.2576E 00	0.2399E 00	0.2288E 00	0.2065E 00	0.1953E 00
588.7	0.2818E 00	0.2548E 00	0.2371E 00	0.2297E 00	0.2074E 00	0.1972E 00
599.6	0.2799E 00	0.2548E 00	0.2399E 00	0.2371E 00	0.2148E 00	0.2111E 00
600.8	0.2771E 00	0.2548E 00	0.2399E 00	0.2362E 00	0.2167E 00	0.2130E 00
610.9	0.2762E 00	0.2576E 00	0.2455E 00	0.2418E 00	0.2260E 00	0.2251E 00
624.2	0.2864E 00	0.2613E 00	0.2604E 00	0.2585E 00	0.2454E 00	0.2492E 00
627.3	0.2892E 00	0.2734E 00	0.2641E 00	0.2632E 00	0.2530E 00	0.2548E 00
630.0	0.2920E 00	0.2771E 00	0.2688E 00	0.2669E 00	0.2567E 00	0.2604E 00
645.0	0.3134E 00	0.2995E 00	0.2948E 00	0.2948E 00	0.2874E 00	0.2948E 00
645.9	0.3143E 00	0.3032E 00	0.2967E 00	0.2967E 00	0.2902E 00	0.2976E 00
665.0	0.3525E 00	0.3441E 00	0.3376E 00	0.3376E 00	0.3367E 00	0.3460E 00
675.0	0.3776E 00	0.3692E 00	0.3646E 00	0.3636E 00	0.3627E 00	0.3729E 00
700.0	0.4427E 00	0.4371E 00	0.4315E 00	0.4287E 00	0.4297E 00	0.4390E 00

FOREL-ULE SCALE: WAVELENGTH (nm) AND TRANSMITTANCE (1/cm)

Wave-length (nm)	XVIII	XIX	XX	XXI
375.0	0.0	0.0	0.0	0.0
400.0	0.0	0.0	0.0	0.0
410.0	0.0	0.0	0.0	0.0
422.2	0.0	0.0	0.0	0.0
432.0	0.0	0.0	0.0	0.0
435.5	0.0	0.0	0.0	0.0
438.6	0.0	0.0	0.0	0.0
444.4	0.0	0.0	0.0	0.0
450.1	0.1860E-02	0.0	0.1860E-02	0.9300E-03
455.9	0.9300E-02	0.3720E-02	0.5580E-02	0.3720E-02
461.2	0.2418E-01	0.1209E-01	0.1302E-01	0.8370E-02
462.0	0.2697E-01	0.1488E-01	0.1488E-01	0.9300E-02
468.7	0.5394E-01	0.3069E-01	0.2511E-01	0.1581E-01
477.7	0.9486E-01	0.5394E-01	0.4092E-01	0.2511E-01
480.0	0.1051E 00	0.6045E-01	0.4371E-01	0.2697E-01
489.4	0.1311E 00	0.7626E-01	0.5394E-01	0.3348E-01
495.2	0.1376E 00	0.8184E-01	0.5766E-01	0.3720E-01
510.0	0.1423E 00	0.8928E-01	0.6417E-01	0.4557E-01
515.1	0.1423E 00	0.9300E-01	0.6882E-01	0.4929E-01
529.8	0.1469E 00	0.1051E 00	0.8370E-01	0.6603E-01
541.4	0.1507E 00	0.1172E 00	0.9951E-01	0.8370E-01
544.3	0.1507E 00	0.1190E 00	0.1032E 00	0.8835E-01
551.8	0.1525E 00	0.1246E 00	0.1116E 00	0.9951E-01
561.9	0.1562E 00	0.1339E 00	0.1228E 00	0.1153E 00
564.1	0.1572E 00	0.1358E 00	0.1246E 00	0.1190E 00
572.5	0.1609E 00	0.1432E 00	0.1348E 00	0.1330E 00
577.3	0.1646E 00	0.1469E 00	0.1404E 00	0.1395E 00
584.8	0.1702E 00	0.1646E 00	0.1488E 00	0.1516E 00
588.7	0.1730E 00	0.1600E 00	0.1534E 00	0.1581E 00
599.6	0.1897E 00	0.1776E 00	0.1748E 00	0.1823E 00
600.8	0.1925E 00	0.1813E 00	0.1860E 00	0.1813E 00
610.9	0.2083E 00	0.1981E 00	0.2037E 00	0.2037E 00
624.2	0.2371E 00	0.2297E 00	0.2381E 00	0.2418E 00
627.3	0.2446E 00	0.2371E 00	0.2464E 00	0.2511E 00
630.0	0.2511E 00	0.2446E 00	0.2539E 00	0.2595E 00
645.0	0.2920E 00	0.2892E 00	0.3013E 00	0.3153E 00
645.9	0.2939E 00	0.2920E 00	0.3050E 00	0.3181E 00
665.0	0.3497E 00	0.3525E 00	0.3711E 00	0.3971E 00
675.0	0.3813E 00	0.3869E 00	0.4073E 00	0.4408E 00
700.0	0.4529E 00	0.4641E 00	0.4892E 00	0.5338E 00

APPENDIX D

STATIONS EXAMINED IN MULTIVARIABLE LINEAR ANALYSIS

(See page 33 for explanation)

Analysis		D	E	F
Sep 16	M-4(S)		E	
Sep 28	M-1(S)		E	F
	M-2(S)		E	F
	M-2(B)			F
	M-3(S)		E	F
	M-4(S)		E	F
	M-5(S)		E	F
Oct 5	M-1(S)		E	F
	M-2(S)		E	F
	M-3(S)		E	F
	M-4(S)		E	F
	M-5(S)		E	F
	M-6(S)		E	F
Oct 12	M-3(S)		E	F
	M-4(S)		E	F
	M-7(S)		E	F
Oct 18	S-1(S)	D	E	
	S-2(S)	D	E	
	S-3(S)	D	E	
	PG-1(S)	D	E	
	PG-2(S)	D	E	
	PG-3(S)	D	E	
Nov 16	500N(S)	D	E	
	500N(B)	D	E	
	400N(S)	D	E	
	400N(B)	D	E	
	300N(S)	D	E	
	300N(B)	D	E	
	175N(S)	D	E	
	175N(B)	D	E	
	100N(S)	D	E	
	BOIL(S)	D	E	
	BOIL(B)	D	E	
	100S(S)	D	E	
	200S(S)	D	E	
	200S(B)	D	E	
	300S(S)	D	E	
	300S(B)		E	
	400S(S)	D	E	
	400S(B)	D	E	
	500S(S)	D	E	
	500S(B)	D	E	

Linear correlation coefficients for data set D

	max T	Wave- length @max T	Part. Area	Vol.	Phosphate	Salinity	Oxygen	Temp	Coliform
x	-.53	.08	.76	.63	.64	.05			-.10
y	-.17	-.06	.29	.35	.44	.19			.04
max T	-	-	.26	-.39	-.51	-.17			.29
Wavelength of max T	-	-	.01	.00	.17	.50			-.25
% Visual Efficiency	.96	-.41	-.22	-.37	-.51	-.26			.34
Dominant wavelength	-.12	-.61	.59	.42	.33	-.18			.09
% Purity	-.43	.22	.71	.57	.62	.21			-.13

Linear correlation coefficients for data set E

	max T	Wave-length @max T	Part. Area	Vol.	Phosphate	Salinity	Oxygen	Temp	Coliform
x	-.40	.21	-.08	-.07	.7	.03			
y	-.17	.01	.06	.17	-.17	.10			
max T	-	-	-.30	-.40	-.49	.07			
Wavelength of max T	-	-	-.01	-.03	.18	.00			
% Visual Efficiency	.99	-.02	-.29	-.40	-.49	.07			
Dominant wavelength	-.15	.39	.04	.04	.31	-.38			
% Purity	-.51	.23	-.01	-.02	.72	.25			

Linear correlation coefficients for data set F

	max T	Wave-length @max T	Part. Area	Vol.	Phosphate	Salinity	Oxygen	Temp	Coliform
x	-.34	.32	-.15	-.25	.71	.10	-.48	.05	
y	-.25	.03	.05	.17	-.32	.11	.22	.21	
max T	-	-	-.07	-.09	-.68	-.23	.46	-.23	
Wavelength of max T	-	-	.10	.12	.27	-.07	.15	.74	
% Visual Efficiency	.99	-.45	-.05	-.07	-.68	-.24	.49	-.15	
Dominant wavelength	-.20	.66	.00	.00	.29	.46	.21	.35	
% Purity	-.68	.40	-.19	-.26	.79	.46	-.68	.22	

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16 SEP 71 MONTEREY       OUTFALL STA  M-2 (SAM 14) SURFACE

          DIAMETER      NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)    PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60          150.     0.8974E 05        0.1651E 07
   1        21.90          214.     0.8061E 05        0.1177E 07
   2        17.40          557.     0.1324E 06        0.1536E 07
   3        13.80         1314.     0.1965E 06        0.1808E 07
   4        11.00         2126.     0.2020E 06        0.1482E 07
   5         8.69         3827.     0.2270E 06        0.1315E 07
   6         6.89         5181.     0.1932E 06        0.8873E 06
   7         5.47         5899.     0.1386E 06        0.5055E 06
   8         4.34         6803.     0.1006E 06        0.2912E 06
   9         3.45         8688.     0.8122E 05        0.1868E 06
  10         2.74        13610.     0.8025E 05        0.1466E 06
  11         2.17        25623.     0.9476E 05        0.1371E 06
  12         1.72        53331.     0.1239E 06        0.1421E 06
  13         1.37       193392.     0.2851E 06        0.2604E 06
  14         1.09       498983.     0.4656E 06        0.3383E 06
TOTAL/2 ML SAMPLE       819698.     0.2492E 07        0.1186E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 SEP 71 MONTEREY       OUTFALL STA M-3 (SAM  9)  SURFACE

          DIAMETER      NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)    PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60          120.     0.7179E 05        0.1321E 07
   1        21.90          172.     0.6479E 05        0.9459E 06
   2        17.40          516.     0.1227E 06        0.1423E 07
   3        13.80         1314.     0.1965E 06        0.1808E 07
   4        11.00         2607.     0.2478E 06        0.1817E 07
   5         8.69         5263.     0.3121E 06        0.1808E 07
   6         6.89         6735.     0.2511E 06        0.1153E 07
   7         5.47         6560.     0.1542E 06        0.5622E 06
   8         4.34         6774.     0.1002E 06        0.2899E 06
   9         3.45         7828.     0.7318E 05        0.1683E 06
  10         2.74        11089.     0.6539E 05        0.1194E 06
  11         2.17        20047.     0.7414E 05        0.1073E 06
  12         1.72        48011.     0.1116E 06        0.1279E 06
  13         1.37       187261.     0.2760E 06        0.2521E 06
  14         1.09       487435.     0.4548E 06        0.3305E 06
TOTAL/2 ML SAMPLE       791732.     0.2576E 07        0.1223E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 SEP 71 MONTEREY       OUTFALL STA  M-4 (SAM 19) SURFACE

          DIAMETER      NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)    PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60           68.     0.4068E 05        0.7486E 06
   1        21.90           65.     0.2448E 05        0.3575E 06
   2        17.40          147.     0.3495E 05        0.4055E 06
   3        13.80          347.     0.5190E 05        0.4775E 06
   4        11.00          546.     0.5189E 05        0.3805E 06
   5         8.69          867.     0.5142E 05        0.2979E 06
   6         6.89    [illegible]    [illegible] 05    0.2891E 06
   7         5.47    [illegible]    [illegible] 05    0.2516E 06
   8         4.34         4174.     0.6175E 05        0.1787E 06
   9         3.45         4874.     0.4556E 05        0.1048E 06
  10         2.74         7268.     0.4286E 05        0.7828E 05
  11         2.17        15378.     0.5687E 05        0.8228E 05
  12         1.72        33423.     0.7766E 05        0.8905E 05
  13         1.37       117364.     0.1730E 06        0.1580E 06
  14         1.09       582950.     0.5440E 06        0.3953E 06
TOTAL/2 ML SAMPLE       772095.     0.1389E 07        0.4294E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 SEP 71 MONTEREY        OUTFALL STA  M-5 (SAM  2) SURFACE

           DIAMETER     NUMBER          AREA                 VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60          74.     0.4427E 05        0.8146E 06
   1        21.90          85.     0.3202E 05        0.4675E 06
   2        17.40         215.     0.5112E 05        0.5930E 06
   3        13.80         489.     0.7314E 05        0.6729E 06
   4        11.00         883.     0.8391E 05        0.6154E 06
   5         8.69        1648.     0.9774E 05        0.5663E 06
   6         6.89        2608.     0.9724E 05        0.4466E 06
   7         5.47        3665.     0.8613E 05        0.3141E 06
   8         4.34        4607.     0.6815E 05        0.1972E 06
   9         3.45        4910.     0.4590E 05        0.1056E 06
  10         2.74        7589.     0.4475E 05        0.8174E 05
  11         2.17       15284.     0.5653E 05        0.8177E 05
  12         1.72       25468.     0.8241E 05        0.9450E 05
  13         1.37      163410.     0.2409E 06        0.2200E 06
  14         1.09      580007.     0.5412E 06        0.3933E 06
TOTAL/2 ML SAMPLE      820942.     0.1645E 07        0.5664E 07
 -   -   -   -   -   -  -   -   -  -   -   -  -  -   -   -   -   -
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28 SEP 71 MONTEREY        OUTFALL STA  M-1 (SAM 10) SURFACE

           DIAMETER     NUMBER          AREA                 VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         432.     0.2585E 06        0.4756E 07
   1        21.90         532.     0.2004E 06        0.2926E 07
   2        17.40         760.     0.1807E 06        0.2096E 07
   3        13.80        2018.     0.3018E 06        0.2777E 07
   4        11.00        3630.     0.3450E 06        0.2530E 07
   5         8.69        4718.     0.2798E 06        0.1621E 07
   6         6.89        5354.     0.1996E 06        0.9169E 06
   7         5.47        4040.     0.9494E 05        0.3462E 06
   8         4.34        4404.     0.6515E 05        0.1885E 06
   9         3.45       13546.     0.1266E 06        0.2913E 06
  10         2.74       77572.     0.4574E 06        0.8355E 06
  11         2.17       25302.     0.9358E 05        0.1354E 06
  12         1.72       83522.     0.1941E 06        0.2225E 06
  13         1.37      217260.     0.3203E 06        0.2925E 06
  14         1.09      675594.     0.6304E 06        0.4581E 06
TOTAL/2 ML SAMPLE     1118684.     0.3748E 07        0.2039E 08
 -   -   -   -   -   -  -   -   -  -   -   -  -  -   -   -   -   -
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28 SEP 71 MONTEREY        OUTFALL STA  M-2 (SAM 15) SURFACE

           DIAMETER     NUMBER          AREA                 VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60        2004.     0.1199E 07        0.2206E 08
   1        21.90         952.     0.3586E 06        0.5236E 07
   2        17.40         212.     0.5041E 05        0.5848E 06
   3        13.80         494.     0.7389E 05        0.6798E 06
   4        11.00         876.     0.8325E 05        0.6105E 06
   5         8.69        1432.     0.8493E 05        0.4920E 06
   6         6.89        2124.     0.7919E 05        0.3638E 06
   7         5.47        2394.     0.5626E 05        0.2052E 06
   8         4.34        3596.     0.5320E 05        0.1539E 06
   9         3.45        8564.     0.8006E 05        0.1841E 06
  10         2.74       10252.     0.6045E 05        0.1104E 06
  11         2.17       25000.     0.9246E 05        0.1338E 06
  12         1.72       59948.     0.1393E 06        0.1597E 06
  13         1.37      179438.     0.2645E 06        0.2416E 06
  14         1.09      677224.     0.6319E 06        0.4592E 06
TOTAL/2 ML SAMPLE      974510.     0.3307E 07        0.3168E 08
 -   -   -   -   -   -  -   -   -  -   -   -  -  -   -   -   -   -
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28 SEP 71 MONTEREY       OUTFALL STA  M-2 (SAM  3) 12 M

          DIAMETER      NUMBER           AREA               VOLUME
CHANNEL   (MICRONS)   PARTICLES    (SQ MICRONS)       (CUBIC MICRONS)

    0        27.60          19.     0.1137E 05          0.2092E 06
    1        21.90          25.     0.9417E 04          0.1375E 06
    2        17.40          35.     0.8323E 04          0.9654E 05
    3        13.80          79.     0.1182E 05          0.1087E 06
    4        11.00         168.     0.1597E 05          0.1171E 06
    5         8.69         301.     0.1785E 05          0.1034E 06
    6         6.89         671.     0.2502E 05          0.1149E 06
    7         5.47        1319.     0.3100E 05          0.1130E 06
    8         4.34        1966.     0.2908E 05          0.8415E 05
    9         3.45        7818.     0.7308E 05          0.1681E 06
   10         2.74       10470.     0.6174E 05          0.1128E 06
   11         2.17       11289.     0.4175E 05          0.6040E 05
   12         1.72       20875.     0.4850E 05          0.5562E 05
   13         1.37       62746.     0.9249E 05          0.8448E 05
   14         1.09      601482.     0.5613E 06          0.4079E 06
TOTAL/2 ML SAMPLE       719263.     0.1039E 07          0.1974E 07
 -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -
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28 SEP 71 MONTEREY       OUTFALL STA  M-3 (SAM 16) SURFACE

          DIAMETER      NUMBER           AREA               VOLUME
CHANNEL   (MICRONS)   PARTICLES    (SQ MICRONS)       (CUBIC MICRONS)

    0        27.60        1570.     0.9393E 06          0.1728E 08
    1        21.90        6017.     0.2267E 07          0.3309E 08
    2        17.40        8601.     0.2045E 07          0.2372E 08
    3        13.80       14975.     0.2240E 07          0.2061E 08
    4        11.00       32785.     0.3116E 07          0.2285E 08
    5         8.69      105252.     0.6243E 07          0.3617E 08
    6         6.89      563657.     0.2102E 08          0.9653E 08
    7         5.47       51196.     0.1203E 07          0.4387E 07
    8         4.34        1170.     0.1731E 05          0.5008E 05
    9         3.45         359.     0.3356E 04          0.7719E 04
   10         2.74          89.     0.5248E 03          0.9586E 03
   11         2.17         196.     0.7249E 03          0.1049E 04
   12         1.72         316.     0.7342E 03          0.8419E 03
   13         1.37         511.     0.7533E 03          0.6880E 03
   14         1.09         700.     0.6532E 03          0.4747E 03
TOTAL/2 ML SAMPLE       787394.     0.3909E 08          0.2547E 09
 -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -
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28 SEP 71 MONTEREY       OUTFALL STA  M-3 (SAM  5) 10 M

          DIAMETER      NUMBER           AREA               VOLUME
CHANNEL   (MICRONS)   PARTICLES    (SQ MICRONS)       (CUBIC MICRONS)

    0        27.60          58.     0.3470E 05          0.6385E 06
    1        21.90          33.     0.1243E 05          0.1815E 06
    2        17.40          50.     0.1189E 05          0.1379E 06
    3        13.80         133.     0.1989E 05          0.1830E 06
    4        11.00         224.     0.2129E 05          0.1561E 06
    5         8.69         416.     0.2467E 05          0.1429E 06
    6         6.89         841.     0.3136E 05          0.1440E 06
    7         5.47        1511.     0.3551E 05          0.1295E 06
    8         4.34        2484.     0.3675E 05          0.1063E 06
    9         3.45        7634.     0.7136E 05          0.1641E 06
   10         2.74       10194.     0.6011E 05          0.1098E 06
   11         2.17       14208.     0.5255E 05          0.7602E 05
   12         1.72       23097.     0.5367E 05          0.6154E 05
   13         1.37       71500.     0.1054E 06          0.9626E 05
   14         1.09      592700.     0.5531E 06          0.4019E 06
TOTAL/2 ML SAMPLE       725083.     0.1125E 07          0.2729E 07
 -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -
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28 SEP 71 MONTEREY       OUTFALL STA  M-4 (SAM 20) SURFACE

          DIAMETER      NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)    PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60        1284.      0.7682E 06         0.1413E 08
   1        21.90         499.      0.1880E 06         0.2744E 07
   2        17.40         152.      0.3614E 05         0.4193E 06
   3        13.80         211.      0.3156E 05         0.2903E 06
   4        11.00         421.      0.4001E 05         0.2934E 06
   5         8.69         621.      0.3683E 05         0.2134E 06
   6         6.89         993.      0.3702E 05         0.1701E 06
   7         5.47        1665.      0.3913E 05         0.1427E 06
   8         4.34        2373.      0.3510E 05         0.1016E 06
   9         3.45         238.      0.2225E 04         0.5117E 04
  10         2.74       11726.      0.6914E 05         0.1263E 06
  11         2.17       13284.      0.4913E 05         0.7107E 05
  12         1.72       33946.      0.7887E 05         0.9044E 05
  13         1.37      115348.      0.1700E 06         0.1553E 06
  14         1.09      519597.      0.4849E 06         0.3523E 06
TOTAL/2 ML SAMPLE      702358.      0.2066E 07         0.1931E 08
- - - - - - - - - - - - - - - - - - - - -
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28 SEP 71 MONTEREY       OUTFALL STA  M-4 (SAM  7) 9 M

          DIAMETER      NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)    PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         101.      0.6043E 05         0.1112E 07
   1        21.90          39.      0.1469E 05         0.2145E 06
   2        17.40          39.      0.9274E 04         0.1076E 06
   3        13.80          68.      0.1017E 05         0.9357E 05
   4        11.00         157.      0.1492E 05         0.1094E 06
   5         8.69         264.      0.1566E 05         0.9071E 05
   6         6.89         634.      0.2364E 05         0.1086E 06
   7         5.47        1050.      0.2467E 05         0.8998E 05
   8         4.34        1585.      0.2345E 05         0.6784E 05
   9         3.45        6011.      0.5619E 05         0.1292E 06
  10         2.74        8516.      0.5021E 05         0.9172E 05
  11         2.17       11141.      0.4120E 05         0.5961E 05
  12         1.72       20318.      0.4721E 05         0.5413E 05
  13         1.37       61782.      0.9107E 05         0.8318E 05
  14         1.09      610285.      0.5695E 06         0.4138E 06
TOTAL/2 ML SAMPLE      721990.      0.1052E 07         0.2826E 07
- - - - - - - - - - - - - - - - - - - - -
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28 SEP 71 MONTEREY       OUTFALL STA  M-5 (SAM 13) SURFACE

          DIAMETER      NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)    PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60        3580.      0.2142E 07         0.3941E 08
   1        21.90        1460.      0.5500E 06         0.8029E 07
   2        17.40         306.      0.7276E 05         0.8441E 06
   3        13.80         332.      0.4966E 05         0.4569E 06
   4        11.00         392.      0.3725E 05         0.2732E 06
   5         8.69         662.      0.3926E 05         0.2275E 06
   6         6.89        1138.      0.4243E 05         0.1949E 06
   7         5.47        1790.      0.4206E 05         0.1534E 06
   8         4.34        2924.      0.4326E 05         0.1252E 06
   9         3.45        9769.      0.9132E 05         0.2100E 06
  10         2.74        6778.      0.3997E 05         0.7301E 05
  11         2.17       23537.      0.8705E 05         0.1259E 06
  12         1.72       67312.      0.1564E 06         0.1793E 06
  13         1.37      210588.      0.3104E 06         0.2835E 06
  14         1.09      670696.      0.6258E 06         0.4548E 06
TOTAL/2 ML SAMPLE     1001264.      0.4330E 07         0.5104E 08
- - - - - - - - - - - - - - - - - - - - -
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28 SEP 71 MONTEREY        OUTFALL STA  M-5 (SAM  9) 12 M

          DIAMETER    NUMBER          AREA             VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0       27.60         34.     0.2034E 05       0.3743E 06
   1       21.90         48.     0.1808E 05       0.2640E 06
   2       17.40         93.     0.2211E 05       0.2565E 06
   3       13.80        159.     0.2378E 05       0.2188E 06
   4       11.00        268.     0.2547E 05       0.1868E 06
   5        8.69        456.     0.2705E 05       0.1567E 06
   6        6.89        829.     0.3091E 05       0.1420E 06
   7        5.47       1488.     0.3497E 05       0.1275E 06
   8        4.34       3580.     0.5296E 05       0.1532E 06
   9        3.45      11133.     0.1041E 06       0.2394E 06
  10        2.74      11097.     0.6543E 05       0.1195E 06
  11        2.17      17720.     0.6553E 05       0.9481E 05
  12        1.72      23271.     0.5407E 05       0.6200E 05
  13        1.37      76799.     0.1132E 06       0.1034E 06
  14        1.09     619402.     0.5780E 06       0.4200E 06
TOTAL/2 ML SAMPLE    766377.     0.1236E 07       0.2919E 07
 -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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5  OCT 71 MONTEREY        OUTFALL STA  M-1 (SAM 14) SURFACE

          DIAMETER    NUMBER          AREA             VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0       27.60        786.     0.4703E 06       0.8653E 07
   1       21.90        850.     0.3202E 06       0.4675E 07
   2       17.40        566.     0.1346E 06       0.1561E 07
   3       13.80       1526.     0.2282E 06       0.2100E 07
   4       11.00       2804.     0.2665E 06       0.1954E 07
   5        8.69       3024.     0.1794E 06       0.1039E 07
   6        6.89       2666.     0.9940E 05       0.4566E 06
   7        5.47       2064.     0.4850E 05       0.1769E 06
   8        4.34       3442.     0.5092E 05       0.1473E 06
   9        3.45       3848.     0.3597E 05       0.8274E 05
  10        2.74      61786.     0.3643E 06       0.6655E 06
  11        2.17      49040.     0.1814E 06       0.2624E 06
  12        1.72      20662.     0.4801E 05       0.5505E 05
  13        1.37      86220.     0.1271E 06       0.1161E 06
  14        1.09     323840.     0.3022E 06       0.2196E 06
TOTAL/2 ML SAMPLE    563124.     0.2857E 07       0.2216E 08
 -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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5 OCT 71 MONTEREY         OUTFALL STA  M-2 (SAM 10) SURFACE

          DIAMETER    NUMBER          AREA             VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0       27.60       2096.     0.1254E 07       0.2307E 08
   1       21.90        974.     0.3669E 06       0.5357E 07
   2       17.40        168.     0.3995E 05       0.4634E 06
   3       13.80        289.     0.4323E 05       0.3977E 06
   4       11.00        375.     0.3564E 05       0.2613E 06
   5        8.69        556.     0.3298E 05       0.1910E 06
   6        6.89        854.     0.3184E 05       0.1463E 06
   7        5.47       1359.     0.3194E 05       0.1165E 06
   8        4.34       2271.     0.3360E 05       0.9720E 05
   9        3.45       4516.     0.4222E 05       0.9710E 05
  10        2.74       9125.     0.5381E 05       0.9828E 05
  11        2.17      16901.     0.6251E 05       0.9043E 05
  12        1.72      50262.     0.1168E 06       0.1339E 06
  13        1.37     165451.     0.2439E 06       0.2228E 06
  14        1.09     488663.     0.4560E 06       0.3314E 06
TOTAL/2 ML SAMPLE    743860.     0.2845E 07       0.3108E 08
 -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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5  OCT 71 MONTEREY        OUTFALL STA  M-2 (SAM  9) 11 M

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60       363.     0.2172E 06        0.3996E 07
   1        21.90       159.     0.5989E 05        0.8744E 06
   2        17.40        67.     0.1593E 05        0.1848E 06
   3        13.80       147.     0.2199E 05        0.2023E 06
   4        11.00       224.     0.2129E 05        0.1561E 06
   5         8.69       356.     0.2111E 05        0.1223E 06
   6         6.89       582.     0.2170E 05        0.9967E 05
   7         5.47      1129.     0.2653E 05        0.9675E 05
   8         4.34      1840.     0.2722E 05        0.7876E 05
   9         3.45      3346.     0.3128E 05        0.7194E 05
  10         2.74      6461.     0.3810E 05        0.6959E 05
  11         2.17     11834.     0.4377E 05        0.6332E 05
  12         1.72     26141.     0.6074E 05        0.6965E 05
  13         1.37    116605.     0.1719E 06        0.1570E 06
  14         1.09    606722.     0.5662E 06        0.4114E 06
TOTAL/2 ML SAMPLE    775976.     0.1345E 07        0.6654E 07
- - - - - - - - - - - - - - - - - - - - -
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5  OCT 71 MONTEREY        OUTFALL STA  M-3 (SAM 11) SURFACE

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60      4490.     0.2686E 07        0.4943E 08
   1        21.90      1968.     0.7413E 06        0.1082E 08
   2        17.40       454.     0.1080E 06        0.1252E 07
   3        13.80       676.     0.1011E 06        0.9302E 06
   4        11.00       962.     0.9142E 05        0.6704E 06
   5         8.69      1520.     0.9015E 05        0.5223E 06
   6         6.89      1796.     0.6696E 05        0.3076E 06
   7         5.47      2938.     0.6904E 05        0.2518E 06
   8         4.34      4188.     0.6195E 05        0.1793E 06
   9         3.45      7310.     0.6834E 05        0.1572E 06
  10         2.74     11026.     0.6501E 05        0.1188E 06
  11         2.17     20072.     0.7423E 05        0.1074E 06
  12         1.72     47836.     0.1111E 06        0.1274E 06
  13         1.37    137028.     0.2020E 06        0.1845E 06
  14         1.09    142466.     0.1329E 06        0.9660E 05
TOTAL/2 ML SAMPLE    384730.     0.4670E 07        0.6516E 08
- - - - - - - - - - - - - - - - - - - - -
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5 OCT 71  MONTEREY        OUTFALL STA  M-3 (SAM  3) 11 M

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60       537.     0.3213E 06        0.5912E 07
   1        21.90       224.     0.8438E 05        0.1232E 07
   2        17.40        76.     0.1807E 05        0.2096E 06
   3        13.80       137.     0.2049E 05        0.1885E 06
   4        11.00       237.     0.2252E 05        0.1652E 06
   5         8.69       342.     0.2028E 05        0.1175E 06
   6         6.89       541.     0.2017E 05        0.9265E 05
   7         5.47      1048.     0.2463E 05        0.8981E 05
   8         4.34      1981.     0.2931E 05        0.8479E 05
   9         3.45      3462.     0.3236E 05        0.7444E 05
  10         2.74      6840.     0.4033E 05        0.7367E 05
  11         2.17     11115.     0.4111E 05        0.5947E 05
  12         1.72     24834.     0.5770E 05        0.6617E 05
  13         1.37     97476.     0.1437E 06        0.1312E 06
  14         1.09    549973.     0.5132E 06        0.3729E 06
TOTAL/2 ML SAMPLE    698823.     0.1390E 07        0.8869E 07
- - - - - - - - - - - - - - - - - - - - -
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5  OCT 71 MONTEREY      OUTFALL STA  M-4 (SAM 20) SURFACE

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES  (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60      1190.    0.7120E 06       0.1310E 08
   1        21.90       524.    0.1974E 06       0.2882E 07
   2        17.40       320.    0.7609E 05       0.8827E 06
   3        13.80       644.    0.9632E 05       0.8862E 06
   4        11.00      1088.    0.1034E 06       0.7582E 06
   5         8.69      1586.    0.9407E 05       0.5450E 06
   6         6.89      1638.    0.6107E 05       0.2805E 06
   7         5.47      1880.    0.4418E 05       0.1611E 06
   8         4.34      3022.    0.4471E 05       0.1293E 06
   9         3.45      5532.    0.5171E 05       0.1189E 06
  10         2.74     10240.    0.6038E 05       0.1103E 06
  11         2.17     21324.    0.7886E 05       0.1141E 06
  12         1.72     42508.    0.9877E 05       0.1133E 06
  13         1.37    150688.    0.2221E 06       0.2029E 06
  14         1.09    539348.    0.5033E 06       0.3657E 06
TOTAL/2 ML SAMPLE    781532.    0.2444E 07       0.2065E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -


5  OCT 71 MONTEREY      OUTFALL STA  M-4 (SAM  1) 4 M

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES  (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60      1993.    0.1192E 07       0.2194E 08
   1        21.90       379.    0.1428E 06       0.2084E 07
   2        17.40       176.    0.4135E 05       0.4855E 06
   3        13.80       325.    0.4861E 05       0.4472E 06
   4        11.00       490.    0.4657E 05       0.3415E 06
   5         8.69       788.    0.4674E 05       0.2708E 06
   6         6.89      1079.    0.4023E 05       0.1848E 06
   7         5.47      1687.    0.3964E 05       0.1446E 06
   8         4.34      3115.    0.4608E 05       0.1333E 06
   9         3.45      5961.    0.5572E 05       0.1282E 06
  10         2.74     11813.    0.6965E 05       0.1272E 06
  11         2.17     19633.    0.7261E 05       0.1050E 06
  12         1.72     55387.    0.1287E 06       0.1476E 06
  13         1.37    175069.    0.2581E 06       0.2357E 06
  14         1.09    491907.    0.4590E 06       0.3336E 06
TOTAL/2 ML SAMPLE    769802.    0.2689E 07       0.2711E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -


5  OCT 71 MONTEREY      OUTFALL STA  M-5 (SAM 16) SURFACE

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES  (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60      2960.    0.1771E 07       0.3259E 08
   1        21.90      1328.    0.5002E 06       0.7303E 07
   2        17.40       378.    0.8988E 05       0.1043E 07
   3        13.80       526.    0.7867E 05       0.7238E 06
   4        11.00       638.    0.6063E 05       0.4446E 06
   5         8.69       984.    0.5836E 05       0.3381E 06
   6         6.89      1248.    0.4653E 05       0.2137E 06
   7         5.47      1716.    0.4033E 05       0.1471E 06
   8         4.34      2756.    0.4077E 05       0.1180E 06
   9         3.45      5408.    0.5056E 05       0.1163E 06
  10         2.74      8306.    0.4898E 05       0.8946E 05
  11         2.17     13622.    0.5038E 05       0.7288E 05
  12         1.72     26252.    0.6100E 05       0.6994E 05
  13         1.37     82668.    0.1219E 06       0.1113E 06
  14         1.09    201664.    0.1882E 06       0.1367E 06
TOTAL/2 ML SAMPLE    350454.    0.3207E 07       0.4351E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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5  OCT 71 MONTEREY       OUTFALL STA  M-5 (SAM  2) 14 M

         DIAMETER     NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0       27.60        360.      0.2154E 06        0.3963E 07
   1       21.90        128.      0.4822E 05        0.7039E 06
   2       17.40         64.      0.1522E 05        0.1765E 06
   3       13.80        131.      0.1959E 05        0.1803E 06
   4       11.00        193.      0.1834E 05        0.1345E 06
   5        8.69        291.      0.1726E 05        0.9999E 05
   6        6.89        535.      0.1995E 05        0.9162E 05
   7        5.47       1067.      0.2507E 05        0.9144E 05
   8        4.34       2061.      0.3049E 05        0.8822E 05
   9        3.45       3073.      0.2873E 05        0.6607E 05
  10        2.74       6051.      0.3568E 05        0.6517E 05
  11        2.17       9805.      0.3626E 05        0.5246E 05
  12        1.72      21223.      0.4931E 05        0.5654E 05
  13        1.37      73958.      0.1090E 06        0.9957E 05
  14        1.09     538608.      0.5026E 06        0.3652E 06
TOTAL/2 ML SAMPLE    657548.      0.1171E 07        0.6235E 07
- - - - - - - - - - - - - - - - - - - - - -


5  OCT 71 MONTEREY       OUTFALL STA  M-6 (SAM  6) SURFACE

         DIAMETER     NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0       27.60       1053.      0.6300E 06        0.1159E 08
   1       21.90        344.      0.1296E 06        0.1892E 07
   2       17.40        126.      0.2996E 05        0.3476E 06
   3       13.80        213.      0.3186E 05        0.2931E 06
   4       11.00        299.      0.2841E 05        0.2084E 06
   5        8.69        447.      0.2651E 05        0.1536E 06
   6        6.89        676.      0.2520E 05        0.1158E 06
   7        5.47       1274.      0.2994E 05        0.1092E 06
   8        4.34       2131.      0.3152E 05        0.9121E 05
   9        3.45       3370.      0.3150E 05        0.7246E 05
  10        2.74       7362.      0.4341E 05        0.7930E 05
  11        2.17      14876.      0.5502E 05        0.7959E 05
  12        1.72      39552.      0.9190E 05        0.1054E 06
  13        1.37     141674.      0.2088E 06        0.1907E 06
  14        1.09     551459.      0.5146E 06        0.3739E 06
TOTAL/2 ML SAMPLE    764856.      0.1908E 07        0.1570E 08
- - - - - - - - - - - - - - - - - - - - - -


12 OCT 71 MONTEREY       OUTFALL STA  M-1 (SAM  5) SURFACE

         DIAMETER     NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0       27.60        738.      0.4415E 06        0.8124E 07
   1       21.90        438.      0.1650E 06        0.2409E 07
   2       17.40        468.      0.1113E 06        0.1291E 07
   3       13.80       1094.      0.1636E 06        0.1505E 07
   4       11.00       1738.      0.1652E 06        0.1211E 07
   5        8.69       2566.      0.1522E 06        0.8317E 06
   6        6.89       2320.      0.8650E 05        0.3973E 06
   7        5.47       2064.      0.4850E 05        0.1769E 06
   8        4.34       3044.      0.4503E 05        0.1303E 06
   9        3.45       5462.      0.5106E 05        0.1174E 06
  10        2.74       9592.      0.5656E 05        0.1033E 06
  11        2.17      17986.      0.6652E 05        0.9623E 05
  12        1.72      34926.      0.8115E 05        0.9305E 05
  13        1.37     125782.      0.1854E 06        0.1693E 06
  14        1.09      24454.      0.2282E 05        0.1658E 05
TOTAL/2 ML SAMPLE    232672.      0.1842E 07        0.1672E 08
- - - - - - - - - - - - - - - - - - - - - -
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12 OCT 71 MONTEREY        OUTFALL STA  M-2 (SAM  2) SURFACE

          DIAMETER     NUMBER          AREA            VOLUME
CHANNEL  (MICRONS)   PARTICLES    (SQ MICRONS)   (CUBIC MICRONS)

   0        27.60        933.     0.5582E 06       0.1027E 08
   1        21.90        575.     0.2166E 06       0.3162E 07
   2        17.40        376.     0.8941E 05       0.1037E 07
   3        13.80        713.     0.1066E 06       0.9811E 06
   4        11.00       1196.     0.1137E 06       0.8335E 06
   5         8.69       1734.     0.1028E 06       0.5958E 06
   6         6.89       2049.     0.7640E 05       0.3509E 06
   7         5.47       2424.     0.5696E 05       0.2077E 06
   8         4.34       3792.     0.5610E 05       0.1623E 06
   9         3.45       6573.     0.6145E 05       0.1413E 06
  10         2.74      11662.     0.6876E 05       0.1256E 06
  11         2.17      23761.     0.8788E 05       0.1271E 06
  12         1.72      56508.     0.1313E 06       0.1506E 06
  13         1.37     181605.     0.2677E 06       0.2445E 06
  14         1.09     507562.     0.4736E 06       0.3442E 06
TOTAL/2 ML SAMPLE     801463.     0.2468E 07       0.1873E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -


12 OCT 71 MONTEREY        OUTFALL STA  M-2 (SAM  3) 11 M

          DIAMETER     NUMBER          AREA            VOLUME
CHANNEL  (MICRONS)   PARTICLES    (SQ MICRONS)   (CUBIC MICRONS)

   0        27.60       1067.     0.6384E 06       0.1175E 08
   1        21.90        145.     0.5462E 05       0.7974E 06
   2        17.40         65.     0.1546E 05       0.1793E 06
   3        13.80        144.     0.2154E 05       0.1982E 06
   4        11.00        183.     0.1739E 05       0.1275E 06
   5         8.69        347.     0.2058E 05       0.1192E 06
   6         6.89        551.     0.2054E 05       0.9436E 05
   7         5.47       1195.     0.2808E 05       0.1024E 06
   8         4.34       2142.     0.3169E 05       0.9168E 05
   9         3.45       3532.     0.3302E 05       0.7594E 05
  10         2.74       6439.     0.3797E 05       0.6935E 05
  11         2.17      12209.     0.4515E 05       0.6532E 05
  12         1.72      29612.     0.6880E 05       0.7890E 05
  13         1.37     112064.     0.1652E 06       0.1509E 06
  14         1.09     541932.     0.5057E 06       0.3675E 06
TOTAL/2 ML SAMPLE     711627.     0.1704E 07       0.1426E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -


12 OCT 71 MONTEREY        OUTFALL STA  M-3 (SAM  8) SURFACE

          DIAMETER     NUMBER          AREA            VOLUME
CHANNEL  (MICRONS)   PARTICLES    (SQ MICRONS)   (CUBIC MICRONS)

   0        27.60       3121.     0.1867E 07       0.3436E 08
   1        21.90       1195.     0.4501E 06       0.6572E 07
   2        17.40        334.     0.7942E 05       0.9213E 06
   3        13.80        695.     0.1040E 06       0.9564E 06
   4        11.00       1136.     0.1080E 06       0.7917E 06
   5         8.69       1514.     0.8980E 05       0.5202E 06
   6         6.89       1684.     0.6279E 05       0.2884E 06
   7         5.47       2093.     0.4919E 05       0.1794E 06
   8         4.34       3501.     0.5179E 05       0.1499E 06
   9         3.45       6005.     0.5614E 05       0.1291E 06
  10         2.74      14060.     0.8290E 05       0.1514E 06
  11         2.17      36919.     0.1365E 06       0.1975E 06
  12         1.72      84088.     0.1954E 06       0.2240E 06
  13         1.37     199725.     0.2944E 06       0.2689E 06
  14         1.09     408064.     0.3808E 06       0.2767E 06
TOTAL/2 ML SAMPLE     764134.     0.4008E 07       0.4598E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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12 OCT 71 MONTEREY        OUTFALL STA  M-3 (SAM 20) 14 M

          DIAMETER      NUMBER           AREA              VOLUME
CHANNEL   (MICRONS)    PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60           45.      0.2692E 05        0.4954E 06
   1        21.90           51.      0.1921E 05        0.2805E 06
   2        17.40           63.      0.1498E 05        0.1738E 06
   3        13.80           90.      0.1346E 05        0.1238E 06
   4        11.00          127.      0.1207E 05        0.8851E 05
   5         8.69          244.      0.1447E 05        0.8384E 05
   6         6.89          402.      0.1499E 05        0.6885E 05
   7         5.47          763.      0.1793E 05        0.6539E 05
   8         4.34         1428.      0.2113E 05        0.6112E 05
   9         3.45         2476.      0.2315E 05        0.5324E 05
  10         2.74         4509.      0.2659E 05        0.4857E 05
  11         2.17         7886.      0.2917E 05        0.4219E 05
  12         1.72        13799.      0.3206E 05        0.3676E 05
  13         1.37        63833.      0.9410E 05        0.8594E 05
  14         1.09       575128.      0.5367E 06        0.3900E 06
TOTAL/2 ML SAMPLE       670844.      0.8969E 06        0.2098E 07
-  -  -  -  -  -  -   -  -  -   -   -  -  -  -  -   -   -  -  -  -
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12 OCT 71 MONTEREY        OUTFALL STA  M-4 (SAM  1) SURFACE

          DIAMETER      NUMBER           AREA              VOLUME
CHANNEL   (MICRONS)    PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         2120.      0.1268E 07        0.2334E 08
   1        21.90         1018.      0.3835E 06        0.5599E 07
   2        17.40          354.      0.8418E 05        0.9765E 06
   3        13.80          668.      0.9991E 05        0.9192E 06
   4        11.00         1186.      0.1127E 06        0.8265E 06
   5         8.69         1744.      0.1034E 06        0.5992E 06
   6         6.89         2004.      0.7472E 05        0.3432E 06
   7         5.47         2436.      0.5725E 05        0.2088E 06
   8         4.34         4078.      0.6033E 05        0.1745E 06
   9         3.45         6730.      0.6291E 05        0.1447E 06
  10         2.74        12822.      0.7560E 05        0.1381E 06
  11         2.17        28336.      0.1048E 06        0.1516E 06
  12         1.72        58324.      0.1355E 06        0.1554E 06
  13         1.37       171244.      0.2524E 06        0.2306E 06
  14         1.09       229520.      0.2142E 06        0.1556E 06
TOTAL/2 ML SAMPLE       522584.      0.3090E 07        0.3396E 08
-  -  -  -  -  -  -   -  -  -   -   -  -  -  -  -   -   -  -  -  -
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12 OCT 71 MONTEREY        OUTFALL STA  M-4 (SAM 14) 4 M

          DIAMETER      NUMBER           AREA              VOLUME
CHANNEL   (MICRONS)    PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60          460.      0.2752E 06        0.5064E 07
   1        21.90          190.      0.7157E 05        0.1045E 07
   2        17.40          125.      0.2972E 05        0.3448E 06
   3        13.80          163.      0.2438E 05        0.2243E 06
   4        11.00          217.      0.2062E 05        0.1512E 06
   5         8.69          391.      0.2319E 05        0.1343E 06
   6         6.89          773.      0.2882E 05        0.1324E 06
   7         5.47         1521.      0.3574E 05        0.1303E 06
   8         4.34         2677.      0.3960E 05        0.1146E 06
   9         3.45         4517.      0.4223E 05        0.9712E 05
  10         2.74         8690.      0.5124E 05        0.9360E 05
  11         2.17        14799.      0.5473E 05        0.7918E 05
  12         1.72        31677.      0.7360E 05        0.8440E 05
  13         1.37       139932.      0.2063E 06        0.1384E 06
  14         1.09       614660.      0.5736E 06        0.4168E 06
TOTAL/2 ML SAMPLE       820792.      0.1550E 07        0.8300E 07
-  -  -  -  -  -  -   -  -  -   -   -  -  -  -  -   -   -  -  -  -
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12 OCT 71 MONTEREY        OUTFALL STA  M-5 (SAM  4) SURFACE

          DIAMETER       NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)     PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         5154.      0.3084E 07         0.5674E 08
   1        21.90         2060.      0.7760E 06         0.1133E 08
   2        17.40          556.      0.1322E 06         0.1534E 07
   3        13.80          816.      0.1221E 06         0.1123E 07
   4        11.00         1128.      0.1072E 06         0.7861E 06
   5         8.69         1480.      0.8778E 05         0.5085E 06
   6         6.89         2244.      0.8367E 05         0.3843E 06
   7         5.47         3272.      0.7689E 05         0.2804E 06
   8         4.34         4960.      0.7338E 05         0.2123E 06
   9         3.45         8000.      0.7479E 05         0.1720E 06
  10         2.74        15502.      0.9141E 05         0.1670E 06
  11         2.17        39656.      0.1467E 06         0.2122E 06
  12         1.72       101274.      0.2353E 06         0.2698E 06
  13         1.37       218946.      0.3228E 06         0.2948E 06
  14         1.09        39450.      0.3681E 05         0.2675E 05
TOTAL/2 ML SAMPLE       444498.      0.5450E 07         0.7404E 08
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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12 OCT 71 MONTEREY        OUTFALL STA  M-5 (SAM 22) 15 M

          DIAMETER       NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)     PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60           18.      0.1077E 05         0.1982E 06
   1        21.90           22.      0.8287E 04         0.1210E 06
   2        17.40           44.      0.1046E 05         0.1214E 06
   3        13.80           79.      0.1182E 05         0.1087E 06
   4        11.00          139.      0.1321E 05         0.9687E 05
   5         8.69          210.      0.1246E 05         0.7216E 05
   6         6.89          373.      0.1391E 05         0.6388E 05
   7         5.47          736.      0.1730E 05         0.6307E 05
   8         4.34         1373.      0.2031E 05         0.5877E 05
   9         3.45         2721.      0.2544E 05         0.5850E 05
  10         2.74         5174.      0.3051E 05         0.5573E 05
  11         2.17         8887.      0.3287E 05         0.4755E 05
  12         1.72        14637.      0.3401E 05         0.3900E 05
  13         1.37        52013.      0.7667E 05         0.7003E 05
  14         1.09       531909.      0.4963E 06         0.3607E 06
TOTAL/2 ML SAMPLE       618335.      0.8143E 06         0.1535E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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12 OCT 71 MONTEREY        OUTFALL STA  M-7 (SAM 10) SURFACE

          DIAMETER       NUMBER          AREA              VOLUME
CHANNEL  (MICRONS)     PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60          427.      0.2555E 06         0.4701E 07
   1        21.90           67.      0.2524E 05         0.3685E 06
   2        17.40           98.      0.2330E 05         0.2703E 06
   3        13.80          197.      0.2947E 05         0.2711E 06
   4        11.00          215.      0.2043E 05         0.1498E 06
   5         8.69          339.      0.2011E 05         0.1165E 06
   6         6.89          533.      0.1987E 05         0.9128E 05
   7         5.47         1050.      0.2467E 05         0.8998E 05
   8         4.34         2105.      0.3114E 05         0.9010E 05
   9         3.45         4512.      0.4218E 05         0.9701E 05
  10         2.74         7573.      0.4465E 05         0.8157E 05
  11         2.17         9450.      0.3495E 05         0.5056E 05
  12         1.72        20602.      0.4787E 05         0.5489E 05
  13         1.37        83446.      0.1230E 06         0.1123E 06
  14         1.09       548080.      0.5114E 06         0.3716E 06
TOTAL/2 ML SAMPLE       678694.      0.1254E 07         0.6916E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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18 OCT 71 SEASIDE          OUTFALL STA  S-1 (SAM  1) SURFACE

          DIAMETER     NUMBER          AREA              VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60         168.     0.1005E 06        0.1849E 07
   1        21.90         332.     0.1251E 06        0.1826E 07
   2        17.40         150.     0.3567E 05        0.4138E 06
   3        13.80         238.     0.3560E 05        0.3275E 06
   4        11.00         502.     0.4771E 05        0.3498E 06
   5         8.69         956.     0.5670E 05        0.3285E 06
   6         6.89        1688.     0.6294E 05        0.2891E 06
   7         5.47        3118.     0.7327E 05        0.2672E 06
   8         4.34        5356.     0.7923E 05        0.2293E 06
   9         3.45       10712.     0.1001E 06        0.2303E 06
  10         2.74       20834.     0.1228E 06        0.2244E 06
  11         2.17       37898.     0.1402E 06        0.2028E 06
  12         1.72       71048.     0.1651E 06        0.1893E 06
  13         1.37      189136.     0.2788E 06        0.2546E 06
  14         1.09      282708.     0.2638E 06        0.1917E 06
TOTAL/2 ML SAMPLE      624844.     0.1688E 07        0.7174E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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18 OCT 71 SEASIDE          OUTFALL STA  S-2 (SAM  8) SURFACE

          DIAMETER     NUMBER          AREA              VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60         214.     0.1280E 06        0.2356E 07
   1        21.90         150.     0.5650E 05        0.8249E 06
   2        17.40         132.     0.3139E 05        0.3641E 06
   3        13.80         178.     0.2662E 05        0.2449E 06
   4        11.00         268.     0.2547E 05        0.1868E 06
   5         8.69         404.     0.2396E 05        0.1388E 06
   6         6.89         766.     0.2856E 05        0.1312E 06
   7         5.47        1364.     0.3205E 05        0.1169E 06
   8         4.34        2078.     0.3074E 05        0.8894E 05
   9         3.45        3894.     0.3640E 05        0.8372E 05
  10         2.74        6548.     0.3861E 05        0.7053E 05
  11         2.17       11448.     0.4234E 05        0.6125E 05
  12         1.72       24744.     0.5749E 05        0.6593E 05
  13         1.37       94440.     0.1392E 06        0.1272E 06
  14         1.09      305912.     0.2855E 06        0.2074E 06
TOTAL/2 ML SAMPLE      452540.     0.9828E 06        0.5068E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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18 OCT 71 SEASIDE          OUTFALL STA  S-3 (SAM 14) SURFACE

          DIAMETER     NUMBER          AREA              VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0        27.60         123.     0.7359E 05        0.1354E 07
   1        21.90          95.     0.3579E 05        0.5225E 06
   2        17.40          92.     0.2188E 05        0.2538E 06
   3        13.80         133.     0.1989E 05        0.1830E 06
   4        11.00         199.     0.1891E 05        0.1387E 06
   5         8.69         309.     0.1833E 05        0.1062E 06
   6         6.89         589.     0.2196E 05        0.1009E 06
   7         5.47        1017.     0.2390E 05        0.8715E 05
   8         4.34        1716.     0.2539E 05        0.7345E 05
   9         3.45        3079.     0.2878E 05        0.6620E 05
  10         2.74        6091.     0.3592E 05        0.6561E 05
  11         2.17       10445.     0.3863E 05        0.5588E 05
  12         1.72       16818.     0.3908E 05        0.4481E 05
  13         1.37       41694.     0.6146E 05        0.5614E 05
  14         1.09      241863.     0.2257E 06        0.1640E 06
TOTAL/2 ML SAMPLE      324263.     0.6892E 06        0.3272E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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18 OCT 71 MONTEREY      OUTFALL STA  M-1 (SAM  7) SURFACE

          DIAMETER    NUMBER         AREA            VOLUME
CHANNEL  (MICRONS)   PARTICLES  (SQ MICRONS)  (CUBIC MICRONS)

   0        27.60        572.     0.3422E 06       0.6297E 07
   1        21.90       1950.     0.7345E 06       0.1072E 08
   2        17.40       7748.     0.1842E 07       0.2137E 08
   3        13.80      17908.     0.2679E 07       0.2464E 08
   4        11.00      29164.     0.2772E 07       0.2032E 08
   5         8.69      34416.     0.2041E 07       0.1183E 08
   6         6.89      25368.     0.9458E 06       0.4345E 07
   7         5.47      14244.     0.3347E 06       0.1221E 07
   8         4.34       8156.     0.1207E 06       0.3491E 06
   9         3.45       8220.     0.7684E 05       0.1767E 06
  10         2.74      13736.     0.8099E 05       0.1479E 06
  11         2.17      34760.     0.1286E 06       0.1860E 06
  12         1.72     133796.     0.3109E 06       0.3565E 06
  13         1.37     351292.     0.5178E 06       0.4730E 06
  14         1.09     215712.     0.2013E 06       0.1463E 06
TOTAL/2 ML SAMPLE     897042.     0.1313E 08       0.1026E 09
- - - - - - - - - - - - - - - - - - - -


18 OCT 71 PACIFIC GROVE OUTFALL STA PG-1 (SAM 20) SURFACE

          DIAMETER    NUMBER         AREA            VOLUME
CHANNEL  (MICRONS)   PARTICLES  (SQ MICRONS)  (CUBIC MICRONS)

   0        27.60         12.     0.7179E 04       0.1321E 06
   1        21.90         16.     0.6027E 04       0.8799E 05
   2        17.40         45.     0.1070E 05       0.1241E 06
   3        13.80         84.     0.1256E 05       0.1156E 06
   4        11.00        149.     0.1416E 05       0.1038E 06
   5         8.69        321.     0.1904E 05       0.1103E 06
   6         6.89        704.     0.2625E 05       0.1206E 06
   7         5.47       1434.     0.3370E 05       0.1229E 06
   8         4.34       2502.     0.3701E 05       0.1071E 06
   9         3.45       4123.     0.3854E 05       0.8865E 05
  10         2.74       5350.     0.3155E 05       0.5762E 05
  11         2.17       6846.     0.2532E 05       0.3663E 05
  12         1.72      13826.     0.3213E 05       0.3684E 05
  13         1.37      59635.     0.8791E 05       0.8029E 05
  14         1.09     280460.     0.2617E 06       0.1902E 06
TOTAL/2 ML SAMPLE     375507.     0.6438E 06       0.1515E 07
- - - - - - - - - - - - - - - - - - - -


18 OCT 71 PACIFIC GROVE OUTFALL STA PG-2 (SAM  6) SURFACE

          DIAMETER    NUMBER         AREA            VOLUME
CHANNEL  (MICRONS)   PARTICLES  (SQ MICRONS)  (CUBIC MICRONS)

   0        27.60         51.     0.3051E 05       0.5614E 06
   1        21.90         94.     0.3541E 05       0.5170E 06
   2        17.40        112.     0.2663E 05       0.3089E 06
   3        13.80        222.     0.3320E 05       0.3055E 06
   4        11.00        297.     0.2822E 05       0.2070E 06
   5         8.69        408.     0.2420E 05       0.1402E 06
   6         6.89       1018.     0.3796E 05       0.1743E 06
   7         5.47       1761.     0.4138E 05       0.1509E 06
   8         4.34       2950.     0.4364E 05       0.1263E 06
   9         3.45       4218.     0.3943E 05       0.9069E 05
  10         2.74       5962.     0.3515E 05       0.6422E 05
  11         2.17       7702.     0.2848E 05       0.4121E 05
  12         1.72      12502.     0.2905E 05       0.3331E 05
  13         1.37      42498.     0.6265E 05       0.5722E 05
  14         1.09     276181.     0.2577E 06       0.1873E 06
TOTAL/2 ML SAMPLE     355976.     0.7536E 06       0.2965E 07
- - - - - - - - - - - - - - - - - - - -
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18 OCT 71 PACIFIC GROVE OUTFALL STA PG-3 (SAM  5) SURFACE

         DIAMETER     NUMBER          AREA             VOLUME
CHANNEL  (MICRONS)   PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0       27.60         20.     0.1197E 05        0.2202E 06
   1       21.90         28.     0.1055E 05        0.1540E 06
   2       17.40         40.     0.9511E 04        0.1103E 06
   3       13.80         64.     0.9573E 04        0.8807E 05
   4       11.00        107.     0.1017E 05        0.7457E 05
   5        8.69        229.     0.1358E 05        0.7869E 05
   6        6.89        499.     0.1860E 05        0.8546E 05
   7        5.47       1128.     0.2651E 05        0.9667E 05
   8        4.34       1787.     0.2644E 05        0.7649E 05
   9        3.45       2942.     0.2750E 05        0.6326E 05
  10        2.74       4449.     0.2623E 05        0.4792E 05
  11        2.17       6114.     0.2261E 05        0.3271E 05
  12        1.72      10546.     0.2450E 05        0.2810E 05
  13        1.37      38358.     0.5654E 05        0.5164E 05
  14        1.09     254528.     0.2375E 06        0.1726E 06
TOTAL/2 ML SAMPLE    320839.     0.5318E 06        0.1381E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 NOV 71       MONTEREY OUTFALL STA 500N(S)      (SAM  8)

         DIAMETER     NUMBER          AREA             VOLUME
CHANNEL  (MICRONS)   PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0       27.60          0.     0.0               0.0
   1       21.90         19.     0.7157E 04        0.1045E 06
   2       17.40         56.     0.1332E 05        0.1545E 06
   3       13.80        135.     0.2019E 05        0.1858E 06
   4       11.00        248.     0.2357E 05        0.1728E 06
   5        8.69        447.     0.2651E 05        0.1536E 06
   6        6.89        727.     0.2711E 05        0.1245E 06
   7        5.47       1279.     0.3006E 05        0.1096E 06
   8        4.34       2070.     0.3062E 05        0.8860E 05
   9        3.45       3821.     0.3572E 05        0.8216E 05
  10        2.74       8595.     0.5068E 05        0.9258E 05
  11        2.17      15512.     0.5737E 05        0.8299E 05
  12        1.72      26933.     0.6258E 05        0.7176E 05
  13        1.37     102000.     0.1504E 06        0.1373E 06
  14        1.09     608261.     0.5676E 06        0.4124E 06
TOTAL/2 ML SAMPLE    770103.     0.1103E 07        0.1973E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 NOV 71       MONTEREY OUTFALL STA 500N(B)      (SAM 22)

         DIAMETER     NUMBER          AREA             VOLUME
CHANNEL  (MICRONS)   PARTICLES   (SQ MICRONS)    (CUBIC MICRONS)

   0       27.60         49.     0.2932E 05        0.5394E 06
   1       21.90         70.     0.2637E 05        0.3850E 06
   2       17.40        170.     0.4042E 05        0.4689E 06
   3       13.80        320.     0.4786E 05        0.4403E 06
   4       11.00        497.     0.4723E 05        0.3464E 06
   5        8.69        806.     0.4780E 05        0.2769E 06
   6        6.89       1291.     0.4813E 05        0.2211E 06
   7        5.47       2335.     0.5487E 05        0.2001E 06
   8        4.34       3979.     0.5886E 05        0.1703E 06
   9        3.45       3810.     0.3562E 05        0.8192E 05
  10        2.74      11481.     0.6770E 05        0.1237E 06
  11        2.17      15479.     0.5725E 05        0.8282E 05
  12        1.72      13633.     0.3168E 05        0.3632E 05
  13        1.37       1813.     0.2673E 04        0.2441E 04
  14        1.09     198146.     0.1849E 06        0.1344E 06
TOTAL/2 ML SAMPLE    253879.     0.7807E 06        0.3510E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 NOV 71       MONTEREY OUTFALL STA 400N(S)      (SAM  5)

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL   (MICRONS)  PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         44.     0.2632E 05        0.4844E 06
   1        21.90         50.     0.1883E 05        0.2750E 06
   2        17.40         78.     0.1855E 05        0.2152E 06
   3        13.80        162.     0.2423E 05        0.2229E 06
   4        11.00        314.     0.2984E 05        0.2188E 06
   5         8.69        559.     0.3315E 05        0.1921E 06
   6         6.89        929.     0.3464E 05        0.1591E 06
   7         5.47       1558.     0.3661E 05        0.1335E 06
   8         4.34       2705.     0.4002E 05        0.1158E 06
   9         3.45       4629.     0.4327E 05        0.9953E 05
  10         2.74       8204.     0.4837E 05        0.8836E 05
  11         2.17      15481.     0.5725E 05        0.8283E 05
  12         1.72      31953.     0.7424E 05        0.8513E 05
  13         1.37     139765.     0.2060E 06        0.1882E 06
  14         1.09     603334.     0.5630E 06        0.4091E 06
TOTAL/2 ML SAMPLE _   809765.   _ 0.1254E_07      _ 0.2970E 07
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


16 NOV 71       MONTEREY OUTFALL STA 400N(B)      (SAM  9)

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL   (MICRONS)  PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         50.     0.2991E 05        0.5504E 06
   1        21.90         61.     0.2298E 05        0.3355E 06
   2        17.40        144.     0.3424E 05        0.3972E 06
   3        13.80        278.     0.4158E 05        0.3825E 06
   4        11.00        349.     0.3317E 05        0.2432E 06
   5         8.69        559.     0.3315E 05        0.1921E 06
   6         6.89        809.     0.3016E 05        0.1385E 06
   7         5.47       1279.     0.3006E 05        0.1096E 06
   8         4.34       1985.     0.2937E 05        0.8496E 05
   9         3.45       3611.     0.3376E 05        0.7764E 05
  10         2.74       7046.     0.4155E 05        0.7589E 05
  11         2.17      13602.     0.5031E 05        0.7277E 05
  12         1.72      29280.     0.6803E 05        0.7801E 05
  13         1.37     140138.     0.2066E 06        0.1887E 06
  14         1.09     640561.     0.5977E 06        0.4343E 06
TOTAL/2 ML SAMPLE _   839752.   _ 0.1283E_07      _ 0.3361E 07
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


16 NOV 71       MONTEREY OUTFALL STA 300N(S)      (SAM 34)

          DIAMETER    NUMBER         AREA              VOLUME
CHANNEL   (MICRONS)  PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         27.     0.1615E 05        0.2972E 06
   1        21.90         45.     0.1695E 05        0.2475E 06
   2        17.40         92.     0.2188E 05        0.2538E 06
   3        13.80        203.     0.3036E 05        0.2793E 06
   4        11.00        354.     0.3364E 05        0.2467E 06
   5         8.69        676.     0.4009E 05        0.2323E 06
   6         6.89       1207.     0.4500E 05        0.2067E 06
   7         5.47       2105.     0.4947E 05        0.1804E 06
   8         4.34       3814.     0.5642E 05        0.1632E 06
   9         3.45       6736.     0.6297E 05        0.1448E 06
  10         2.74      12398.     0.7310E 05        0.1335E 06
  11         2.17      22069.     0.8162E 05        0.1181E 06
  12         1.72      40620.     0.9438E 05        0.1082E 06
  13         1.37     122360.     0.1804E 06        0.1647E 06
  14         1.09     556415.     0.5192E 06        0.3773E 06
TOTAL/2 ML SAMPLE _   769121.   _ 0.1322E_07_     _ 0.3154E 07
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
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16 NOV 71        MONTEREY OUTFALL STA 300N(B)      (SAM  4)

          DIAMETER     NUMBER          AREA               VOLUME
CHANNEL  (MICRONS)   PARTICLES    (SQ MICRONS)      (CUBIC MICRONS)

    0       27.60          23.     0.1376E 05         0.2532E 06
    1       21.90          33.     0.1243E 05         0.1815E 06
    2       17.40          80.     0.1902E 05         0.2207E 06
    3       13.80         173.     0.2588E 05         0.2381E 06
    4       11.00         338.     0.3212E 05         0.2356E 06
    5        8.69         499.     0.2960E 05         0.1715E 06
    6        6.89         786.     0.2931E 05         0.1346E 06
    7        5.47        1345.     0.3161E 05         0.1153E 06
    8        4.34        2148.     0.3178E 05         0.9194E 05
    9        3.45        3753.     0.3508E 05         0.8069E 05
   10        2.74        7445.     0.4390E 05         0.8019E 05
   11        2.17       14160.     0.5237E 05         0.7576E 05
   12        1.72       28459.     0.6613E 05         0.7582E 05
   13        1.37       12183.     0.1796E 05         0.1640E 05
   14        1.09      627140.     0.5852E 06         0.4252E 06
TOTAL/2 ML SAMPLE      698565.     0.1026E 07         0.2396E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 NOV 71        MONTEREY OUTFALL STA 175N(S)      (SAM 16)

          DIAMETER     NUMBER          AREA               VOLUME
CHANNEL  (MICRONS)   PARTICLES    (SQ MICRONS)      (CUBIC MICRONS)

    0       27.60          45.     0.2692E 05         0.4954E 06
    1       21.90          61.     0.2298E 05         0.3355E 06
    2       17.40         123.     0.2925E 05         0.3393E 06
    3       13.80         230.     0.3440E 05         0.3165E 06
    4       11.00         384.     0.3649E 05         0.2676E 06
    5        8.69         608.     0.3606E 05         0.2089E 06
    6        6.89         923.     0.3441E 05         0.1581E 06
    7        5.47        1588.     0.3732E 05         0.1361E 06
    8        4.34        2536.     0.3752E 05         0.1085E 06
    9        3.45        4298.     0.4018E 05         0.9241E 05
   10        2.74        8281.     0.4883E 05         0.8919E 05
   11        2.17       16075.     0.5945E 05         0.8601E 05
   12        1.72       33522.     0.7789E 05         0.8931E 05
   13        1.37      136717.     0.2015E 06         0.1841E 06
   14        1.09      595233.     0.5554E 06         0.4036E 06
TOTAL/2 ML SAMPLE      800624.     0.1279E 07         0.3310E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 NOV 71        MONTEREY OUTFALL STA 175N(B)      (SAM  1)

          DIAMETER     NUMBER          AREA               VOLUME
CHANNEL  (MICRONS)   PARTICLES    (SQ MICRONS)      (CUBIC MICRONS)

    0       27.60         434.     0.2597E 06         0.4778E 07
    1       21.90         168.     0.6328E 05         0.9239E 06
    2       17.40         236.     0.5612E 05         0.6510E 06
    3       13.80         548.     0.8197E 05         0.7541E 06
    4       11.00         902.     0.8572E 05         0.6286E 06
    5        8.69        1244.     0.7378E 05         0.4274E 06
    6        6.89        1870.     0.6972E 05         0.3203E 06
    7        5.47        2706.     0.6359E 05         0.2319E 06
    8        4.34        4022.     0.5950E 05         0.1722E 06
    9        3.45        6040.     0.5646E 05         0.1299E 06
   10        2.74        9366.     0.5523E 05         0.1009E 06
   11        2.17       12318.     0.4556E 05         0.6591E 05
   12        1.72       12514.     0.2908E 05         0.3334E 05
   13        1.37       25482.     0.3756E 05         0.3431E 05
   14        1.09      340064.     0.3173E 06         0.2306E 06
TOTAL/2 ML SAMPLE      417914.     0.1355E 07         0.9482E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 NOV 71        MONTEREY OUTFALL STA 100N(S)      (SAM 18)

           DIAMETER    NUMBER          AREA              VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60           0.     0.0               0.0
   1        21.90          44.     0.1657E 05        0.2420E 06
   2        17.40          98.     0.2330E 05        0.2703E 06
   3        13.80         208.     0.3111E 05        0.2862E 06
   4        11.00         355.     0.3374E 05        0.2474E 06
   5         8.69         560.     0.3321E 05        0.1924E 06
   6         6.89         943.     0.3516E 05        0.1615E 06
   7         5.47        1447.     0.3400E 05        0.1240E 06
   8         4.34        2106.     0.3116E 05        0.9014E 05
   9         3.45        3802.     0.3554E 05        0.8175E 05
  10         2.74        6798.     0.4008E 05        0.7322E 05
  11         2.17       12747.     0.4714E 05        0.6820E 05
  12         1.72       24260.     0.5637E 05        0.6464E 05
  13         1.37       99095.     0.1461E 06        0.1334E 06
  14         1.09      629007.     0.5869E 06        0.4265E 06
TOTAL/2 ML SAMPLE      781470.     0.1150E 07        0.2462E 07
-  -  -  -  -  -  -  -  -  -   -  -  -  -  -   -  -  -  -  -
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16 NOV 71        MONTEREY OUTFALL STA 100N(B)      (SAM 15)

           DIAMETER    NUMBER          AREA              VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         286.     0.1711E 06        0.3148E 07
   1        21.90         148.     0.5575E 05        0.8139E 06
   2        17.40         140.     0.3329E 05        0.3862E 06
   3        13.80         360.     0.5385E 05        0.4954E 06
   4        11.00         630.     0.5987E 05        0.4391E 06
   5         8.69        1220.     0.7236E 05        0.4192E 06
   6         6.89        1526.     0.5690E 05        0.2613E 06
   7         5.47        2190.     0.5146E 05        0.1877E 06
   8         4.34        3010.     0.4453E 05        0.1288E 06
   9         3.45        4784.     0.4472E 05        0.1029E 06
  10         2.74        5730.     0.3379E 05        0.6172E 05
  11         2.17        1238.     0.4579E 04        0.6624E 04
  12         1.72           0.     0.0               0.0
  13         1.37           0.     0.0               0.0
  14         1.09       52692.     0.4917E 05        0.3573E 05
TOTAL/2 ML SAMPLE       73954.     0.7314E 06        0.6487E 07
-  -  -  -  -  -  -  -  -  -   -  -  -  -  -   -  -  -  -  -
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16 NOV 71        MONTEREY OUTFALL STA BOIL(S)      (SAM 13)

           DIAMETER    NUMBER          AREA              VOLUME
CHANNEL   (MICRONS)   PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60          71.     0.4248E 05        0.7816E 06
   1        21.90          94.     0.3541E 05        0.5170E 06
   2        17.40         217.     0.5160E 05        0.5986E 06
   3        13.80         503.     0.7523E 05        0.6922E 06
   4        11.00         862.     0.8192E 05        0.6007E 06
   5         8.69        1148.     0.6809E 05        0.3945E 06
   6         6.89        1385.     0.5164E 05        0.2372E 06
   7         5.47        1687.     0.3964E 05        0.1446E 06
   8         4.34        2584.     0.3823E 05        0.1106E 06
   9         3.45        4285.     0.4006E 05        0.9213E 05
  10         2.74        8391.     0.4948E 05        0.9038E 05
  11         2.17       16522.     0.6110E 05        0.8840E 05
  12         1.72       34768.     0.8078E 05        0.9263E 05
  13         1.37      130202.     0.1919E 06        0.1753E 06
  14         1.09      579750.     0.5410E 06        0.3931E 06
TOTAL/2 ML SAMPLE      782469.     0.1449E 07        0.5009E 07
-  -  -  -  -  -  -  -  -  -   -  -  -  -  -   -  -  -  -  -
```

```
16 NOV 71        MONTEREY OUTFALL STA BOIL(B)      (SAM  2)

          DIAMETER    NUMBER        AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60        157.     0.9393E 05        0.1728E 07
   1        21.90        178.     0.6705E 05        0.9789E 06
   2        17.40        348.     0.8275E 05        0.9599E 06
   3        13.80        660.     0.9872E 05        0.9082E 06
   4        11.00        725.     0.6890E 05        0.5053E 06
   5         8.69       1346.     0.7983E 05        0.4625E 06
   6         6.89       1863.     0.6946E 05        0.3191E 06
   7         5.47       2477.     0.5821E 05        0.2123E 06
   8         4.34       3719.     0.5502E 05        0.1592E 06
   9         3.45       5530.     0.5170E 05        0.1189E 06
  10         2.74       8723.     0.5143E 05        0.9395E 05
  11         2.17      10785.     0.3989E 05        0.5770E 05
  12         1.72       4491.     0.1043E 05        0.1197E 05
  13         1.37      23502.     0.3464E 05        0.3164E 05
  14         1.09     213970.     0.1997E 06        0.1451E 06
TOTAL/2 ML SAMPLE     278474.     0.1062E 07        0.6693E 07
- - - - - - - - - - - - - - - - - - - - -
```

```
16 NOV 71        MONTEREY OUTFALL STA 100S(S)      (SAM 32)

          DIAMETER    NUMBER        AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         94.     0.5624E 05        0.1035E 07
   1        21.90         57.     0.2147E 05        0.3135E 06
   2        17.40        108.     0.2568E 05        0.2979E 06
   3        13.80        196.     0.2932E 05        0.2697E 06
   4        11.00        297.     0.2822E 05        0.2070E 06
   5         8.69        587.     0.3482E 05        0.2017E 06
   6         6.89        989.     0.3687E 05        0.1694E 06
   7         5.47       1883.     0.4425E 05        0.1614E 06
   8         4.34       3061.     0.4528E 05        0.1310E 06
   9         3.45       5494.     0.5136E 05        0.1181E 06
  10         2.74      10270.     0.6056E 05        0.1106E 06
  11         2.17      18852.     0.6972E 05        0.1009E 06
  12         1.72      36080.     0.8383E 05        0.9613E 05
  13         1.37     118946.     0.1753E 06        0.1601E 06
  14         1.09     588091.     0.5488E 06        0.3988E 06
TOTAL/2 ML SAMPLE     785005.     0.1312E 07        0.3771E 07
- - - - - - - - - - - - - - - - - - - - -
```

```
16 NOV 71        MONTEREY OUTFALL STA 200S(S)      (SAM 10)

          DIAMETER    NUMBER        AREA              VOLUME
CHANNEL  (MICRONS)  PARTICLES   (SQ MICRONS)     (CUBIC MICRONS)

   0        27.60         45.     0.2692E 05        0.4954E 06
   1        21.90         55.     0.2072E 05        0.3025E 06
   2        17.40        110.     0.2616E 05        0.3034E 06
   3        13.80        269.     0.4023E 05        0.3702E 06
   4        11.00        387.     0.3678E 05        0.2697E 06
   5         8.69        642.     0.3808E 05        0.2206E 06
   6         6.89       1007.     0.3755E 05        0.1725E 06
   7         5.47       1584.     0.3722E 05        0.1357E 06
   8         4.34       2557.     0.3783E 05        0.1094E 06
   9         3.45       4712.     0.4405E 05        0.1013E 06
  10         2.74       8803.     0.5191E 05        0.9482E 05
  11         2.17      17279.     0.6390E 05        0.9245E 05
  12         1.72      35910.     0.8344E 05        0.9568E 05
  13         1.37     127492.     0.1879E 06        0.1717E 06
  14         1.09     585229.     0.5461E 06        0.3968E 06
TOTAL/2 ML SAMPLE     786081.     0.1279E 07        0.3332E 07
- - - - - - - - - - - - - - - - - - - - -
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```
16 NOV 71        MONTEREY OUTFALL STA 300S(S)       (SAM  3)

          DIAMETER      NUMBER          AREA               VOLUME
CHANNEL   (MICRONS)   PARTICLES    (SQ MICRONS)      (CUBIC MICRONS)

   0        27.60          96.      0.5744E 05         0.1057E 07
   1        21.90          78.      0.2938E 05         0.4290E 06
   2        17.40         147.      0.3495E 05         0.4055E 06
   3        13.80         286.      0.4278E 05         0.3936E 06
   4        11.00         409.      0.3687E 05         0.2850E 06
   5         8.69         661.      0.3920E 05         0.2271E 06
   6         6.89         899.      0.3352E 05         0.1540E 06
   7         5.47        1605.      0.3772E 05         0.1375E 06
   8         4.34        2561.      0.3789E 05         0.1096E 06
   9         3.45        4331.      0.4049E 05         0.9312E 05
  10         2.74        7610.      0.4487E 05         0.8197E 05
  11         2.17       14223.      0.5260E 05         0.7610E 05
  12         1.72       28869.      0.6708E 05         0.7692E 05
  13         1.37      110664.      0.1631E 06         0.1490E 06
  14         1.09      604581.      0.5642E 06         0.4100E 06
TOTAL/2 ML SAMPLE      777020.      0.1284E 07         0.4085E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
```

```
16 NOV 71        MONTEREY OUTFALL STA 300S(B)       (SAM 11)

          DIAMETER      NUMBER          AREA               VOLUME
CHANNEL   (MICRONS)   PARTICLES    (SQ MICRONS)      (CUBIC MICRONS)

   0        27.60         238.      0.1424E 06         0.2620E 07
   1        21.90         216.      0.8136E 05         0.1188E 07
   2        17.40         392.      0.9321E 05         0.1081E 07
   3        13.80         940.      0.1406E 06         0.1293E 07
   4        11.00         935.      0.8886E 05         0.6516E 06
   5         8.69        2128.      0.1262E 06         0.7312E 06
   6         6.89        2842.      0.1060E 06         0.4867E 06
   7         5.47        4190.      0.9846E 05         0.3591E 06
   8         4.34        5854.      0.8660E 05         0.2506E 06
   9         3.45        5098.      0.4766E 05         0.1096E 06
  10         2.74       20206.      0.1191E 06         0.2176E 06
  11         2.17       36450.      0.1348E 06         0.1950E 06
  12         1.72       51330.      0.1193E 06         0.1368E 06
  13         1.37       67326.      0.9925E 05         0.9065E 05
  14         1.09      262988.      0.2454E 06         0.1783E 06
TOTAL/2 ML SAMPLE      461133.      0.1729E 07         0.9590E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
```

```
16 NOV 71        MONTEREY OUTFALL STA 400S(S)       (SAM 25)

          DIAMETER      NUMBER          AREA               VOLUME
CHANNEL   (MICRONS)   PARTICLES    (SQ MICRONS)      (CUBIC MICRONS)

   0        27.60          66.      0.3949E 05         0.7266E 06
   1        21.90          53.      0.1996E 05         0.2915E 06
   2        17.40         125.      0.2972E 05         0.3448E 06
   3        13.80         308.      0.4607E 05         0.4238E 06
   4        11.00         508.      0.4828E 05         0.3540E 06
   5         8.69         709.      0.4205E 05         0.2436E 06
   6         6.89         904.      0.3371E 05         0.1548E 06
   7         5.47        1522.      0.3577E 05         0.1304E 06
   8         4.34        2600.      0.3846E 05         0.1113E 06
   9         3.45        4898.      0.4579E 05         0.1053E 06
  10         2.74        9340.      0.5507E 05         0.1006E 06
  11         2.17       17952.      0.6639E 05         0.9605E 05
  12         1.72       34104.      0.7924E 05         0.9086E 05
  13         1.37      120841.      0.1781E 06         0.1627E 06
  14         1.09      595152.      0.5554E 06         0.4036E 06
TOTAL/2 ML SAMPLE      789082.      0.1313E 07         0.3740E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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16 NOV 71        MONTEREY OUTFALL STA 400S(B)     (SAM 31)

         DIAMETER     NUMBER          AREA               VOLUME
CHANNEL  (MICRONS)  PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0       27.60          57.    0.3410E 05         0.6275E 06
   1       21.90         112.    0.4219E 05         0.6160E 06
   2       17.40         262.    0.6230E 05         0.7227E 06
   3       13.80         597.    0.8929E 05         0.8215E 06
   4       11.00         933.    0.8867E 05         0.6502E 06
   5        8.69        1327.    0.7870E 05         0.4560E 06
   6        6.89        1920.    0.7159E 05         0.3288E 06
   7        5.47        2920.    0.6862E 05         0.2502E 06
   8        4.34        4907.    0.7259E 05         0.2100E 06
   9        3.45        7645.    0.7147E 05         0.1644E 06
  10        2.74       12887.    0.7599E 05         0.1388E 06
  11        2.17       20242.    0.7486E 05         0.1083E 06
  12        1.72       32886.    0.7641E 05         0.8762E 05
  13        1.37      109199.    0.1610E 06         0.1470E 06
  14        1.09      589653.    0.5502E 06         0.3998E 06
TOTAL/2 ML SAMPLE     785547.    0.1618E 07         0.5729E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
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```
16 NOV 71        MONTEREY OUTFALL STA 500S(S)     (SAM  7)

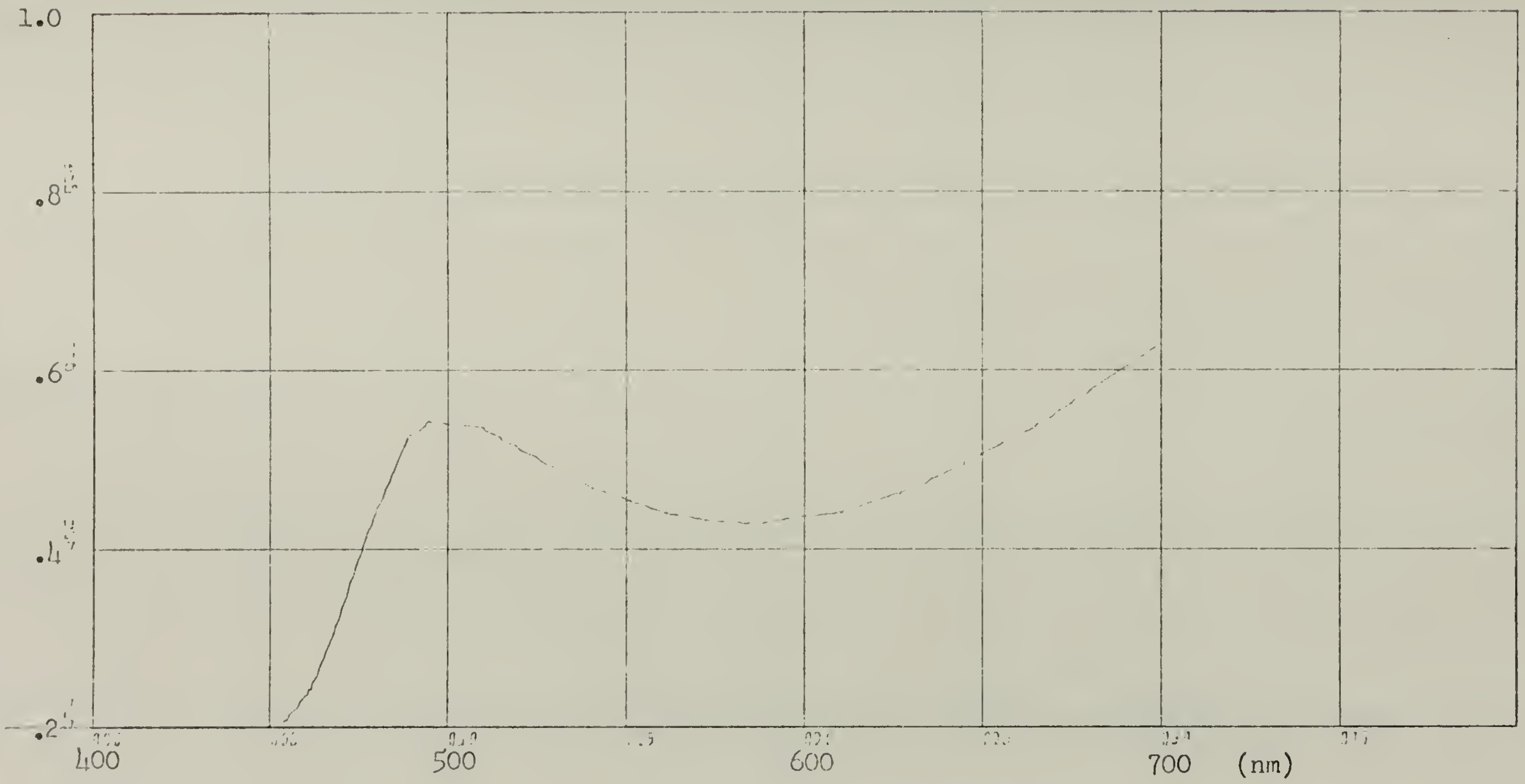
         DIAMETER     NUMBER          AREA               VOLUME
CHANNEL  (MICRONS)  PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0       27.60          55.    0.3291E 05         0.6055E 06
   1       21.90          60.    0.2260E 05         0.3300E 06
   2       17.40         173.    0.4114E 05         0.4772E 06
   3       13.80         338.    0.5056E 05         0.4651E 06
   4       11.00         573.    0.5445E 05         0.3993E 06
   5        8.69         873.    0.5178E 05         0.3000E 06
   6        6.89        1225.    0.4567E 05         0.2098E 06
   7        5.47        2087.    0.4904E 05         0.1788E 06
   8        4.34        9566.    0.1415E 06         0.4094E 06
   9        3.45       10879.    0.1017E 06         0.2339E 06
  10        2.74       15037.    0.8867E 05         0.1620E 06
  11        2.17       21822.    0.8071E 05         0.1168E 06
  12        1.72       40243.    0.9351E 05         0.1072E 06
  13        1.37      128824.    0.1899E 06         0.1734E 06
  14        1.09      559822.    0.5224E 06         0.3796E 06
TOTAL/2 ML SAMPLE     791577.    0.1567E 07         0.4548E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
```

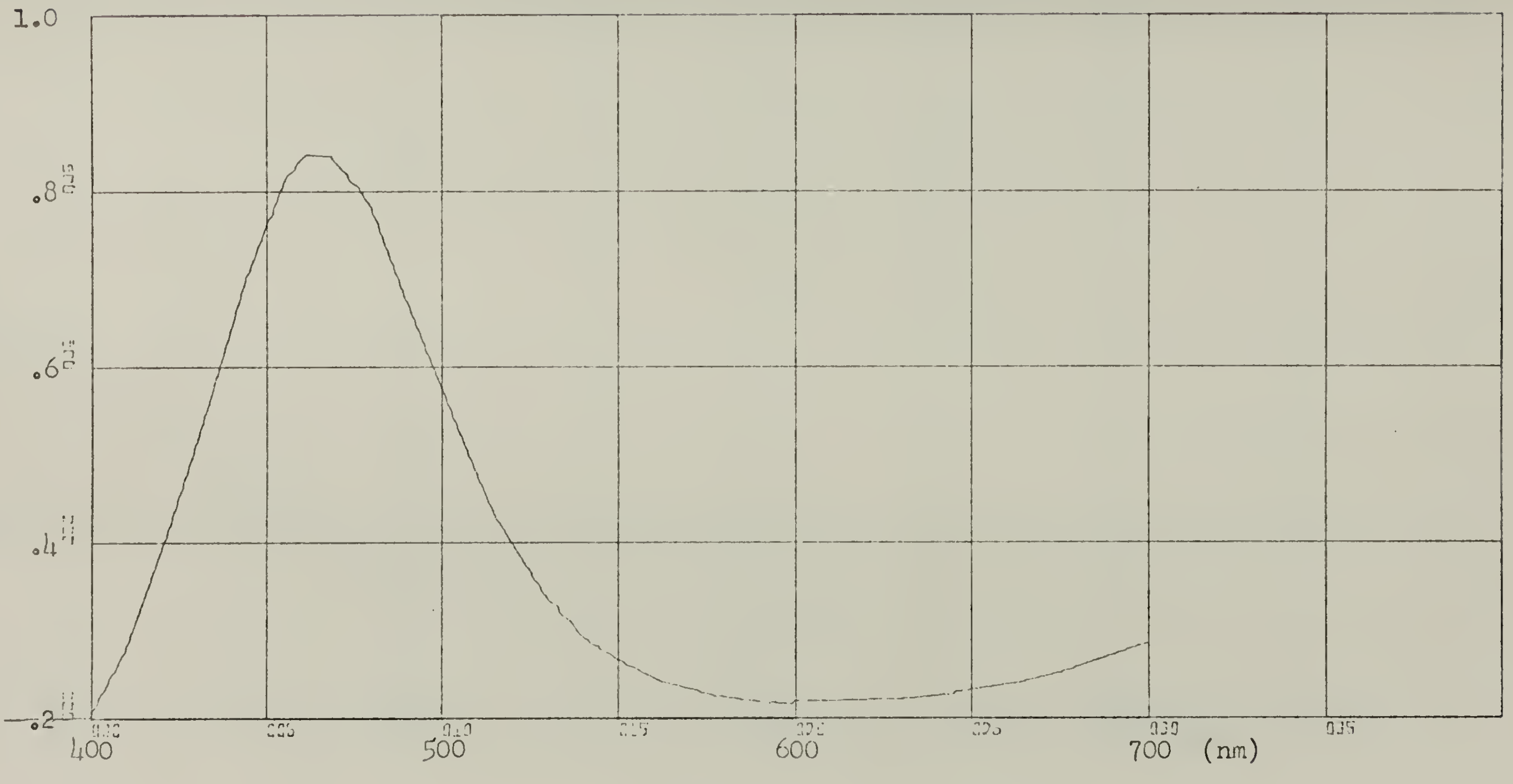
```
16 NOV 71        MONTEREY OUTFALL STA 500S(B)     (SAM 33)

         DIAMETER     NUMBER          AREA               VOLUME
CHANNEL  (MICRONS)  PARTICLES    (SQ MICRONS)     (CUBIC MICRONS)

   0       27.60          83.    0.4966E 05         0.9137E 06
   1       21.90          94.    0.3541E 05         0.5170E 06
   2       17.40         239.    0.5683E 05         0.6592E 06
   3       13.80         516.    0.7718E 05         0.7100E 06
   4       11.00         711.    0.6757E 05         0.4955E 06
   5        8.69        1212.    0.7188E 05         0.4164E 06
   6        6.89        1900.    0.7084E 05         0.3254E 06
   7        5.47        3750.    0.8812E 05         0.3214E 06
   8        4.34        7301.    0.1080E 06         0.3125E 06
   9        3.45        8187.    0.7653E 05         0.1760E 06
  10        2.74       12844.    0.7573E 05         0.1383E 06
  11        2.17       20899.    0.7729E 05         0.1118E 06
  12        1.72       36556.    0.8494E 05         0.9740E 05
  13        1.37      106749.    0.1574E 06         0.1437E 06
  14        1.09      533404.    0.4977E 06         0.3617E 06
TOTAL/2 ML SAMPLE     734445.    0.1595E 07         0.5700E 07
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
```

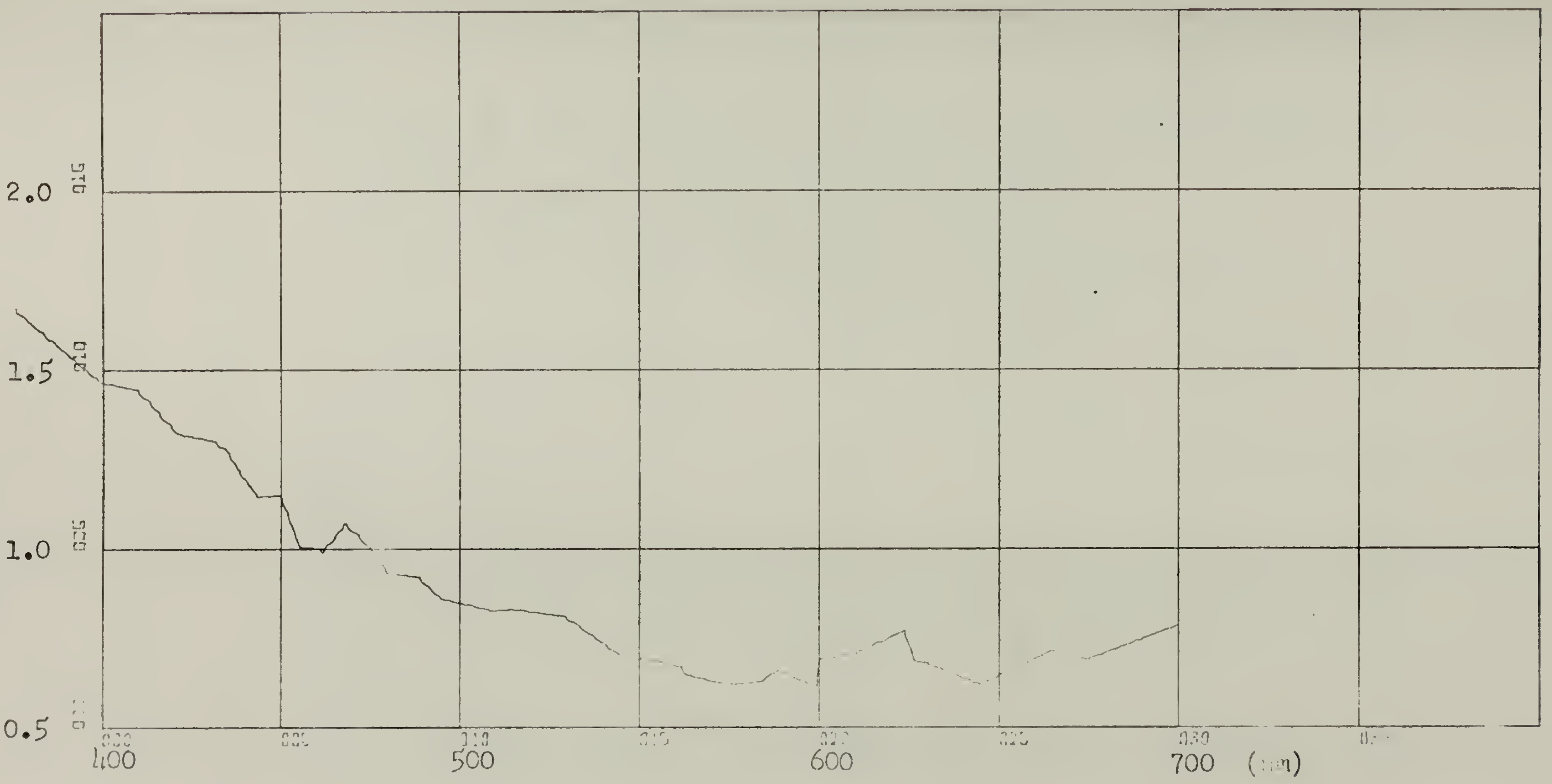


X-SCALE 5.00E+01 UNITS INCH. ADD +4.00E+02 UNITS TO ALL X VALUES
Y-SCALE 2.00E-01 UNITS INCH.
TRANSMITTANCE VS. WAVELENGTH (NM)
FOREL-ULE SCALE XV

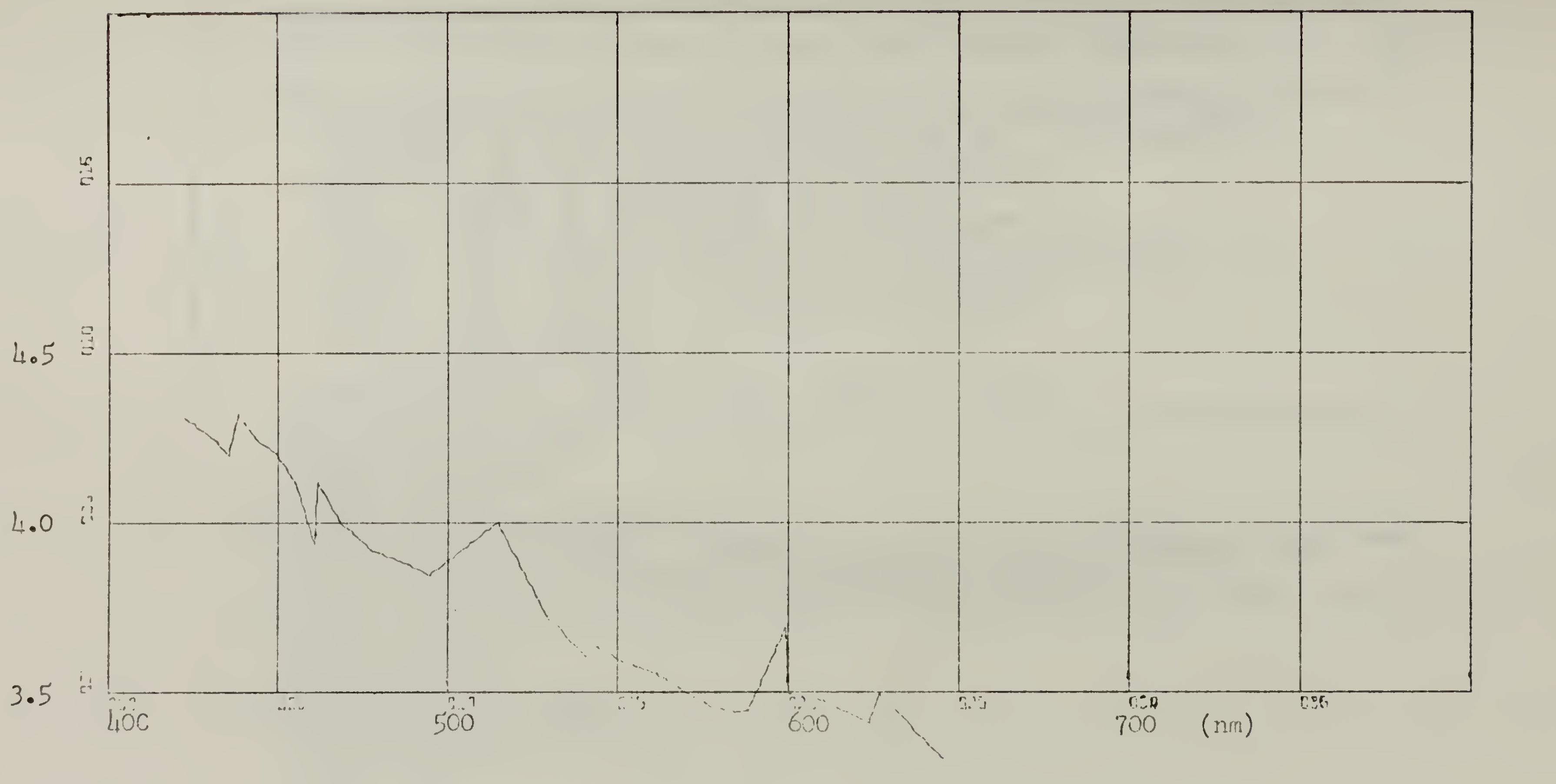


X-SCALE-5.00E+01 UNITS INCH.   ADD +4.00E+02 UNITS TO ALL X VALUES.
Y-SCALE-2.00E-01 UNITS INCH.

TRANSMITTANCE VS. WAVELENGTH (NM)
FOREL-ULE SCALE   III



X-SCALE=5.00E+01 UNITS INCH. ADD +4.00E+02 UNITS TO ALL X VALUES.
Y-SCALE=5.00E-01 UNITS INCH. ADD +5.00E-01 UNITS TO ALL Y VALUES.
ATTEN. COEF. (1/M) VS WAVELENGTH (NM)
16 NOV 71 MONTEREY OUTFALL STA 175N(B)



X-SCALE=5.00E+01 UNITS INCH. ADD +4.00E+02 UNITS TO ALL X VALUES.
Y-SCALE=5.00E-01 UNITS INCH. ADD +3.00E+00 UNITS TO ALL Y VALUES.
ATTEN. COEF. (1/M) VS WAVELENGTH (MU)
28 SEP 71 MONTEREY OUTFALL STA M-1(S)

```
C    *******************************************************************
C    *                                                                 *
C    *        PARTICLE DISTRIBUTION AREA AND VOLUME CALCULATION        *
C    *                                                                 *
C    *******************************************************************
C        THIS PROGRAM CALCULATES THE VOLUME AND AREA OF A SAMPLE
C        COUNTED IN A 15 CHANNEL COULTER COUNTER.  THE PROGRAM
C        ASSUMES THE PARTICLES ARE PERFECT SPHERES.
C     DIA(I) = DIAMETER ASSOCIATED WITH CHANNEL I
C       X(I) = NUMBER OF PARTICLES IN CHANNEL I
C       V(I) = TOTAL VOLUME OF PARTICLES IN CHANNEL I
C       A(I) = TOTAL AREA OF PARTICLES IN CHANNEL I
C          B = ARRAY CONTAINING THE TITLE FOR EACH DATA SET
C       XTOT = TOTAL NUMPER OF PARTICLES IN SAMPLE
C       VTOT = TOTAL VOLUME OF PARTICLES IN SAMPLE
C       ATOT = TOTAL AREA OF PARTICLES IN SAMPLE
C         I = CHANNEL NUMBER + 1
C         J = CHANNEL NUMBFR
      DIMENSION X(16), A(15), V(15), DIA(15), B(15)
      DATA DIA/27.6,21.9,17.4,13.8,11.0,8.69,6.89,5.47,4.34,3.45,2.74,2.
     117,1.72,1.37,1.09/
    1 FORMAT (15A4,8X,I2)
    2 FORMAT (8F10.0)
    9 FORMAT (1H1)
   10 FORMAT (1X,///,1X,15A4,//)
   11 FORMAT (11X,'DIAMETER    NUMBER',8X,'AREA',10X,'VOLUME',/,2X,'CHAN
     1NEL  (MICRONS)  PARTICLES  (SQ MICRONS)  (CUBIC MICRONS)',/)
   12 FORMAT (3X,I3,6X,F6.2,3X,F9.0,4X,E10.4,6X,E10.4)
   13 FORMAT (2X,'TOTAL',13X,F10.0,4X,E10.4,6X,E10.4,//,10X,'PER 2 ML SA
     1MPLE',/////)
      PI = 3.141597
      WRITE (6,9)
  200 CONTINUE
      READ (5,1) B, ICHEK
      IF (ICHEK .NE. 0) STOP
      READ (5,2) X
      XTOT = 0.
      VTOT = 0.
      ATOT = 0.
      DO 50 I = 1,15
      V(I) = 0.166667 * PI * X(I) * DIA(I)**3
      A(I) = .25*PI * X(I) * DIA(I) * DIA(I)
      VTOT = VTOT + V(I)
      XTOT = XTOT + X(I)
      ATOT = ATOT + A(I)
   50 CONTINUE
      WRITE (6,10) B
      WRITE (6,11)
```

```
      DO 60 I = 1,15
      J = I - 1
      WRITE (6,12) J, DIA(I), X(I), A(I), V(I)
   60 CONTINUE
      WRITE (6,13) XTOT, ATOT, VTOT
      GO TO 200
      END
C
```

SAMPLE DATA

```
 16 SEP 71 MONTEREY        OUTFALL STA  M-2 (SAM 14) SURFACE
 150.      214.      557.      1314.     2126.     3827.     5181.     5899.
 6803.     8688.     13610.    25623.    53331.    193392.   498983.   51408.
```

```
C    ******************************************************************
C    *                                                                *
C    *     TRANSMISSION AND ATTENUATION COEFFICIENT PLOT ROUTINE      *
C    *                                                                *
C    ******************************************************************
C         THIS PROGRAM PLOTS THE WAVELENGTH AND EITHER TRANSMISSION,
C         TRANSMISSION PER M, AND/OR ATTENUATION COEFFICIENT.  THE
C         PROGRAM READS FORTY VALUES OF EACH OF THE ABOVE VARIABLES.  IT
C         ALSO READS THE VISUAL EFFICIENCY, X, Y, AND Z (TRICHROMATIC
C         VALUES) INTO THE PROGRAM.
C           A = ARRAY CONTAINING THE TITLE FOR DATA SET
C    TRANT(I) = CORRECTED SAMPLE TRANSMITTANCE REFERRED TO AIR
C     WAVE(I) = WAVELENGTHS AT WHICH TRANT(I) OBSERVED
C    ALPHA(I) = TOTAL BEAM ATTENUATION COEFFICIENT (1/M)
C    TRANM(I) = CORRECTED SAMPLE TRANSMITTANCE REFERRED TO AIR PER
C               METER PATH LENGTH (1/M)
C          XC = TRICHROMATIC VALUE (CHROMATICITY) X
C          YC = TRICHROMATIC VALUE (CHROMATICITY) Y
C          ZC = TRICHROMATIC VALUE (CHROMATICITY) Z
C          VE = VISUAL EFFICIENCY
C         TRANT(1) = 0.0 SIGNALS THE PROGRAM THAT ONLY 30 WAVELENGTHS
C         WERE EXAMINED.  THIS SIGNALS THE PROGRAM TO CALL CHANG.
C         SUBROUTINE CHANG CONVERTS THE INPUT BY OMITTING THE 10
C         WAVELENGTHS NOT OBSERVED FROM THE ARRAYS WHICH ARE ACTUALLY
C         PLOTTED.
      REAL*8 ITITLE(12)/'ATTEN. COEF. (1/M) VS WAVELENGTH (NM)
     1                                                '/
      REAL LABEL /4H    /
      DIMENSION X(40), Y(40), WAVE(40), TRANT(40), TRANM(40), ALPHA(40)
    1 FORMAT (6A8,20X,I2)
    2 FORMAT (F10.1, 3E10.4)
    3 FORMAT ('0','LAST = ',I2)
    4 FORMAT (F10.1,3E10.4)
  100 CONTINUE
      READ (5,1) (ITITLE (I),I=7,12), ICHEK
      IF (ICHEK.NE.0) STOP
      READ (5,2) (WAVE(I), TRANT(I), TRANM(I), ALPHA(I), I=1,40)
      READ (5,4) VE, XC, YC, ZC
      IF (TRANT(1) .EQ. 0.0) GO TO 20
      NUMPTS = 40
      GO TO 30
   20 CONTINUE
      CALL CHANG (WAVE)
      CALL CHANG (ALPHA)
      NUMPTS = 30
   30 CONTINUE
      MODCUR = 0
      ITYPE = 0
```

```
      IGRID = 1
      IWIDE = 8
      EXSCAL = 0
      YSCALE = 0
      MODYAX = 1
      IYRIGH = 0
      IHIGH = 4
      IXUP = 0
      MODXAX = 1
      CALL DRAW (NUMPTS, WAVE , ALPHA, MODCUR, ITYPE, LABEL, ITITLE, EXS
     1CAL, YSCALE, IXUP, IYRIGH, MODXAX, MODYAX, IWIDE, IHIGH, IGRID, LA
     2ST)
      WRITE (6,3) LAST
      GO TO 100
      END


      SUBROUTINE CHANG (C)
      DIMENSION C(40)
      C (  1) = C(  4)
      C (  2) = C(  5)
      C (  3) = C(  6)
      C (  4) = C(  7)
      C (  5) = C(  8)
      C (  6) = C(  9)
      C (  7) = C(10)
      C (  8) = C(11)
      C (  9) = C(12)
      C (10) = C(13)
      C (11) = C(14)
      C (12) = C(16)
      C (13) = C(17)
      C (14) = C(19)
      C (15) = C(20)
      C (16) = C(21)
      C (17) = C(22)
      C (18) = C(23)
      C (19) = C(24)
      C (20) = C(25)
      C (21) = C(26)
      C (22) = C(27)
      C (23) = C(28)
      C (24) = C(29)
      C (25) = C(30)
      C (26) = C(31)
      C (27) = C(32)
      C (28) = C(33)
      C (29) = C(34)
```

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C (30) = C(37)
RETURN
END
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LIST OF REFERENCES

1. Frederick, M. A., An Atlas of Secchi Disc Transparency Measurements and Forel-Ule Codes for the Oceans of the World, M.S. Thesis, Naval Postgraudate School, Monterey, 1970.

2. Jerlov, N. G., Optical Oceanography, Elsevier Publishing Company, 1968.

3. Sower, L. A., The Forel Scale and Its Modifications, Informal Oceanographic Manuscript No. 35-60, U.S. Navy Hydrographic Office, Washington, D.C., November, 1960.

4. Instruction Manual for Obtaining Oceanographic Data, H.O. Pub. 607, 3d ed., U.S. Naval Oceanographic Office, 1968.

5. The Science of Color, Thomas Y. Crowell Company, 1953.

6. Trumbauer, D. S. A Coloform Bacteria Survey of Monterey Bay Off Del Monte Beach, M.S. Thesis, Naval Postgraduate School, Monterey, 1966.

7. Strickland, J.D.H. and Parsons, T. R., A Manual of Sea Water Analysis, 2d ed., Queen's Printer and Controller of Stationery, Ottowa, Canada, 1965.

8. Standard Methods for the Examination of Water and Wastewater, 12th ed, American Public Health Association, 1965.

9. Burt, W. V., Distribution of Suspended Materials in Chesapeake Bay, Sear Foundation Journal of Marine Research 14(1), 1955, pp. 47-62.

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ABSTRACT

A study was made to relate certain optical properties with other observed properties of water sampled in southern Monterey Bay, California. Dominant wavelength, percent purity, and visual efficiency were determined for 65 near-shore water samples using a one-meter sample cell in a modified Beckman DU-2 spectrophotometer. Measurements made at the sample locations included salinity, surface temperature, phosphate, coliform count, oxygen, and particle size distribution, in the 1.04μ to 27.6μ diameter range. Most of the sampling was done at or near the Monterey sewage outfall. Dominate wavelengths were found to vary between 570 nm and 585 nm. Percent purity was found to fluctuate between 2 and 40 percent. Neither variable seems to be strongly sensitive to variation in treated sewage concentration for the Monterey outfall. The maximum transmission was linearly fitted to the logarithm of the projected particle area, A, by the equation: $\log_{10}(A/10^6) = .544 - .634$ (max T), where A is in μ^2, and transmission is per meter. Dominant wavelength for each of the 21 Forel-Ule scale colors was measured spectrophotometrically and compared with the dominant wavelengths of the samples.

14 KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
OCEAN WATER COLOR						
FOREL COLOR						
CHROMATICITY COORDINATES OF SEA WATER						
SEWAGE EFFLUENT IN SEA WATER						
SPECTRAL TRANSMISSION OF SEA WATER						
MONTEREY BAY, CALIFORNIA						
PARTICLE SIZE DISTRIBUTION IN SEA WATER						
INORGANIC PHOSPHATE IN SEA WATER						
DISSOLVED OXYGEN IN SEA WATER						
COLIFORM COUNT IN SEA WATER						
LIGHT ATTENUATION IN SEA WATER						
TURBIDITY OF SEA WATER						
LIGHT TRANSMISSIVITY IN SEA WATER						
WATER TRANSPARENCY						

Thesis 133640
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Optical signatures of the near-shore waters of southern Monterey Bay.